SELENIUM FULL MATERIAL

-

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INTRODUCTION OF AUTOMATION TESTING

Important Java concepts required for selenium:

- Conditions(if, if-else, switch)
- Loops(for, while, do-while, for-each)
- Oops(Inheritance, Polymorphism, Encapsulation, Abstraction)
- Method overloading, overriding
- Constructors
- String
- Type casting, Upcasting
- Code optimization
- Collection(List and Set)

Automation:

- Performing any task by using a tool or machine is called as automation.

Advantages:

1. Save the time.
2. Faster
3. Requires less manual effort
4. Restless.
5. Accuracy will be more
6. Multi-task
7. Requires less human resources

Dis Advantages:

1. Initial investment will be more.
2. It requires constant maintenance
3. It requires additional skill sets.

Automation testing:

- Testing an application by using any automation tools is called as automation testing.

Automation Tool:

- It's a software or an application which is used to automate any applications.
    - Ex: Selenium, QTP, Appium, AutoIT etc,

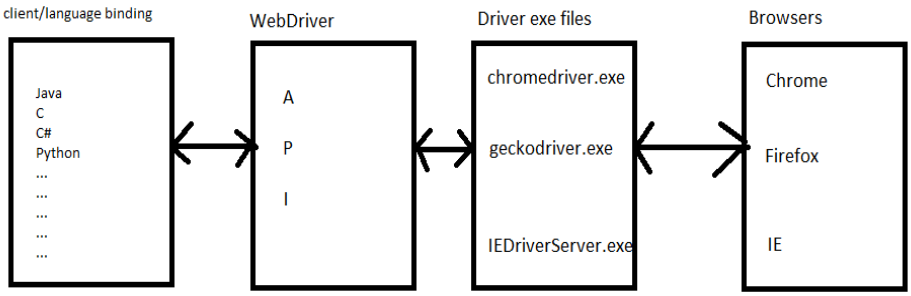
Selenium:

- It's a free and open source automation tool which is used to automation any web based applications.

Advantages of selenium:

- It is freely available automation tool. To make use of selenium for commercial purpose we don't have to buy any license. It is available in below website.
    - https://www.seleniumhq.org/download/
- Anyone can view source code of selenium which is available in below website.
    - https://github.com/SeleniumHQ/selenium
- Using selenium we can automate any web based applications such as gmail, facebook, flipkart etc…
- It supports for 14 programming languages.
- It supports for multiple platforms such as Windows, Mac, Linux.
- It supports all most all the browsers such as chrome, firefox, ie, safari, opera.

<u>High Level Architecture of selenium:</u>



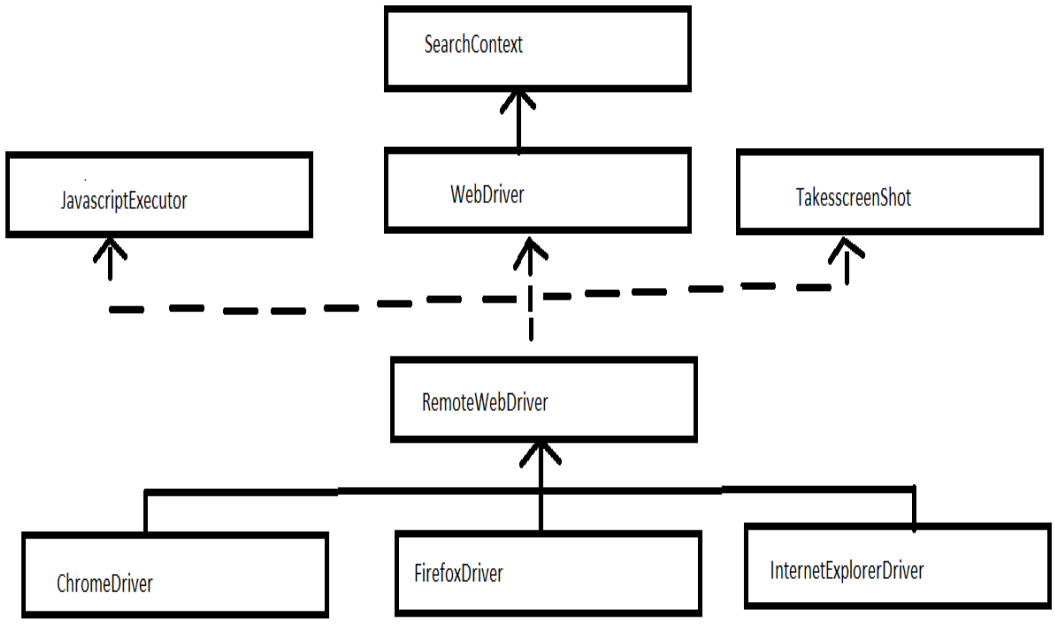
- Selenium supports for multiple languages such as java, c, python etc,
- Each of these languages contains generic libraries(Re-useable codes) which is called as client/language binding.
- These client binding will communicates with as API called WebDriver
- Here client binding will communicate the actions which has to be performed on the browser such as open the browser, enter url/text, click, close etc.

- To perform action on the browser WebDriver will communicate with driver executable files such as chromedriver.exe, geckodriver.exe, IEDriverServer.exe etc

Note:

1. To perform action on chrome browser, webdriver will communicate with chromedriver.exe
2. To perform action on firefox browser, webdriver will communicate with geckodriver.exe
3. To perform action on ie browser, webdriver will communicate with IEDriverServer.exe

Java selenium Architecture:



Interface:

1. SearchContext
2. JavaScriptExecutor

3. WebDriver

Classes:

1. RemoteWebDriver

2. ChromeDriver

3. InternetExplorerDriver

- SearchContext is the super most interface which contains 2 methods,
    1. findElement()
    2. findElements()
- SearchContext interface is inherited by another interface called WebDriver which contains 13 methods including findELement() and findElements()
- There are other 2 interfaces such as
    1. JavascriptExeutor:- which is used to execute javascript statements
    2. TakesscreenShot:- which is used to take screenshots of webpage
- All these interfaces are implemented in a class called RemoteWebdriver(Super most class in selenium)
- All the methods of RemoteWebdriver class are overridden in respective browser classes such as, ChromeDriver, FirefoxDriver , InternetExplorerDriver.

WebDriver methods:

1	get()
2	getTitle()
3	getCurrentUrl()
4	getPageSource()
5	findElement()
6	findElements()
7	getWindowHandle()
8	getWindowHandles()
9	switchTo()
10	manage()
11	navigate()
12	close()
13	quit()

JavascriptExecutor methods:

1	executeScript()
2	executeAsyncScript()

TakesscreenShot methods:

1. getScreenShotAs()

Note:

1. ChromeDriver class is used to work with chrome browser.
2. FirefoxDriver class is used to work with firefox browser.
3. InternetExplorerDriver class is used to work with ie browser.

Tools Required:

- jdk[1.8 & above]
- Eclipse[Mars, Neon, Oxygen]
- Selenium jar file
- Driver executable files
- Latest version of browsers
- Application Under Testing

Steps to install selenium:

- Download selenium jar file and driver exe files from following website.
  URL→ http://www.seleniumhq.org/download
- Extract all the driver exe files
- In eclipse, create a java project with the name Automation.
- Under the Java project create 2 folders with the name drivers and jars
  To create folder, Right click on project→new→create folder
- Store all extracted driver exe files under drivers folder
- Store selenium jar file under jars folder
- Associate selenium jar file with java project
  To associate the jar file, right click on jar file→Build path→Add to build path

Note:

- Before launching the browser we have to set path of the driver exe file.
- We can set path of the driver exe file by using setProperty() of System class.
- setProperty() is a static method which takes 2 args of type String. They are,
  - key
  - value
- key for geckcodriver is, webdriver.gecko.driver
- value is the path of the driver exe file. We can specify the value in any of the following ways,
  - C:\\Users\\Venkat\\Desktop\\capgemini\\Automation\\drivers\\geckodriver.exe
  - C:/Users/Venkat/Desktop/capgeminis/Automation/drivers/geckodriver.exe

    - ./drivers/geckodriver.exe(.---> path of the current java project)
- If we do not set path of the driver exe file, then it will throw IllegalStateException.

BROWSER LAUNCHING

1. Open the browser

Firefox browser:

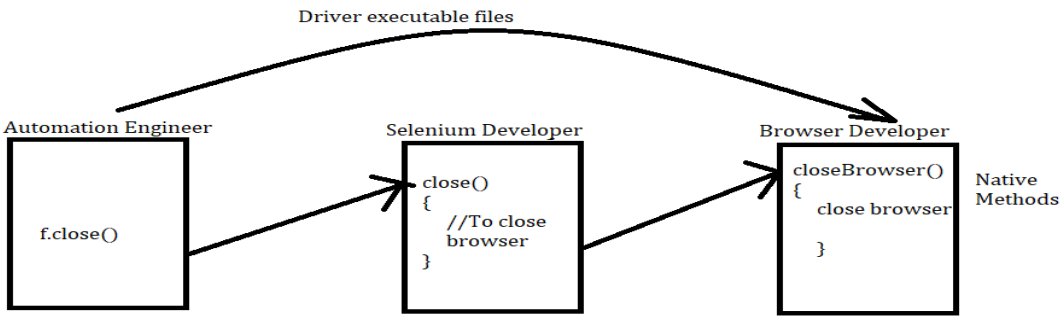
```
public class FacebookAccount {
	public static void main(String[] args) {

		// to configure driver
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		// create the firefox driver

		WebDriver driver = new FirefoxDriver();
		// url mention
		driver.get("https://www.facebook.com/");
		driver.close();
	}
}
```

Q1: How does selenium performs the action?

Ans: By calling native methods of the browsers.

Q2: How do you call native methods of the browsers?

Ans: By using driver executable files.



Close();

- It is used to close the application.
- It will close the current browser.

Quit():

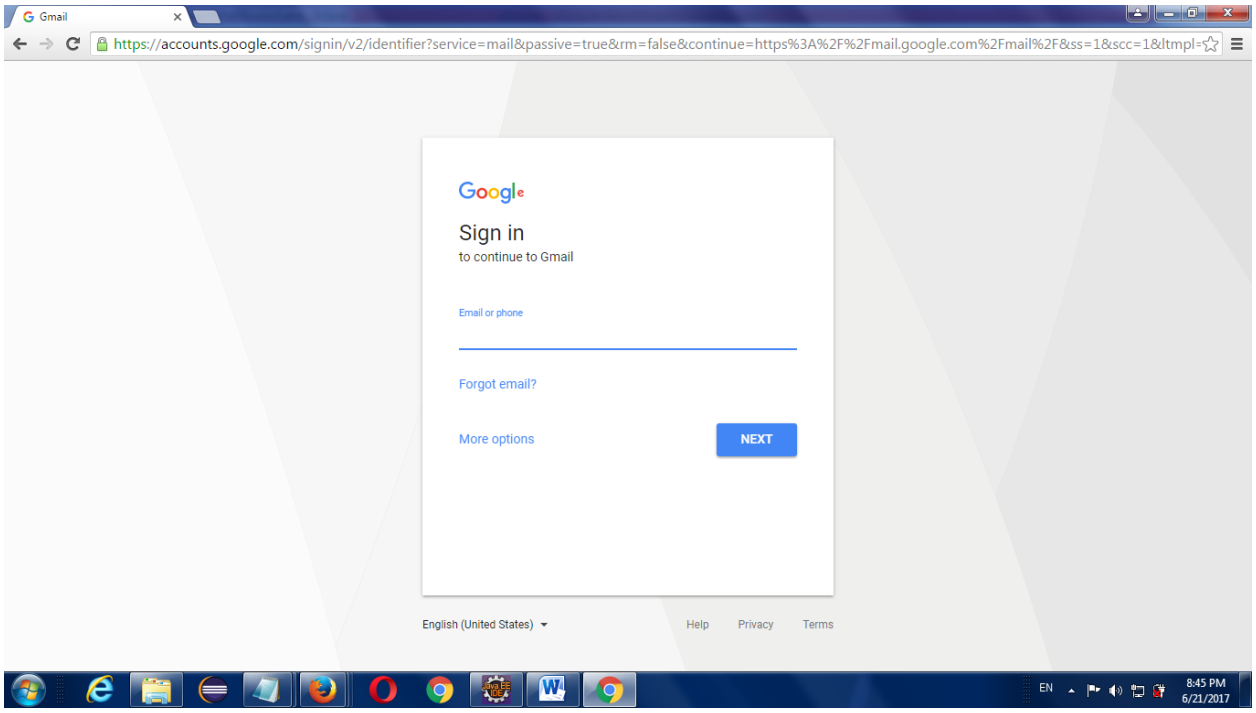
- Destroy the object.
- It will close all browser windows opened by selenium webdriver

Chrome Launching:

chrome driver-v60=chrome driver-v2.30

```
public class GmailAccount {
	public static void main(String[] args) {
		System.setProperty("webdriver.chrome.driver",
"C:/Users/siva/workspace/Selenium/driver/chromedriver.exe");


		WebDriver driver = new ChromeDriver();
		driver.get("https://www.gmail.com/");
		driver.manage().window().maximize();

	}}
```

Output of the above program:



IE Launching:

IE-v11.0= internet driver server-v3.4

Internet Explorer browser:

Before launching IE browser we have to do the following settings.

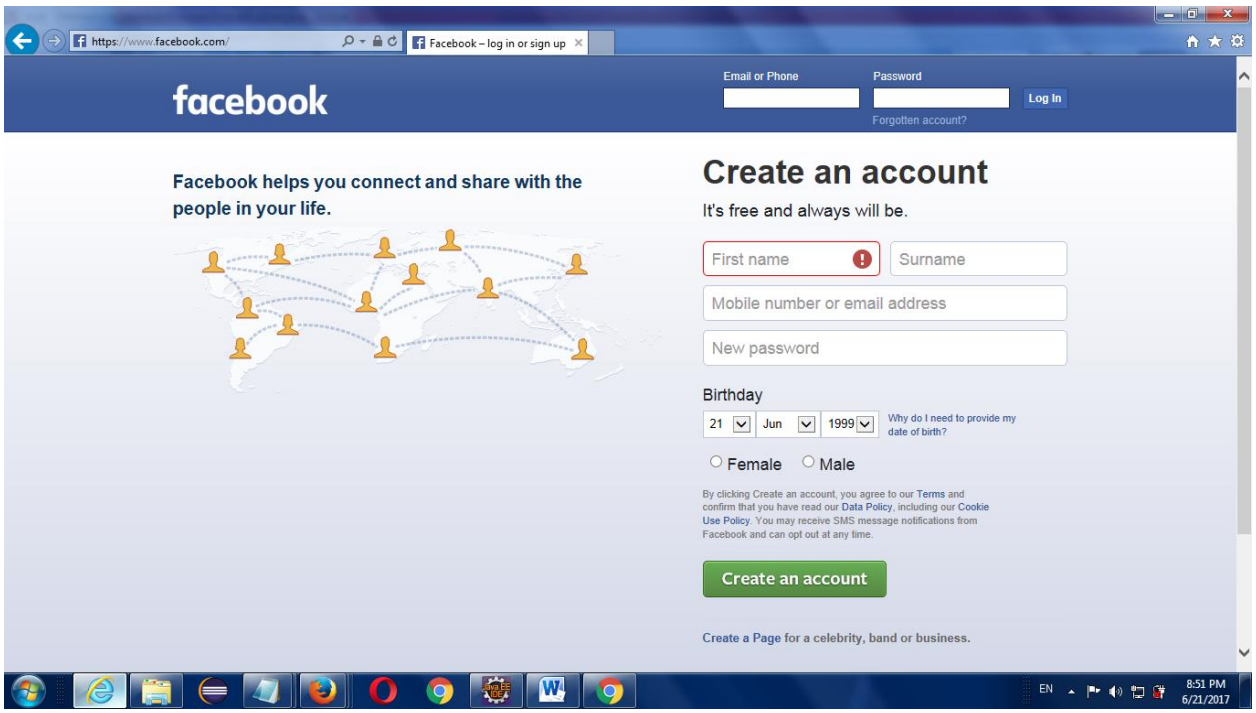
- open the ie browser
- goto tools and click on internet options
- goto security tab
- Select enable protected mode checkbox in all the zone
    - Internet
    - Local intranet
    - trusted sites
    - Restricted sites
- Set the zoom level to 100%

IE Launching:

```
public class IntenetExplore {
        public static void main(String[] args) {
```

```
                System.setProperty("webdriver.ie.driver",
"C:/Users/siva/workspace/Selenium/driver/IEDriverServer.exe");


                WebDriver driver = new InternetExplorerDriver();
                driver.get("https://www.facebook.com/");
                driver.manage().window().maximize();
        }

}
```

Output of the program


https://www.facebook.com/
Facebook – log in or sign up
facebook
Email or Phone
Password
Log In
Forgotten account?
Facebook helps you connect and share with the people in your life.
Create an account
It's free and always will be.
First name
Surname
Mobile number or email address
New password
Birthday
21
Jun
1999
Why do I need to provide my date of birth?
Female
Male
By clicking Create an account, you agree to our Terms and confirm that you have read our Data Policy, including our Cookie Use Policy. You may receive SMS message notifications from Facebook and can opt out at any time.
Create an account
Create a Page for a celebrity, band or business.
EN
8:51 PM
6/21/2017

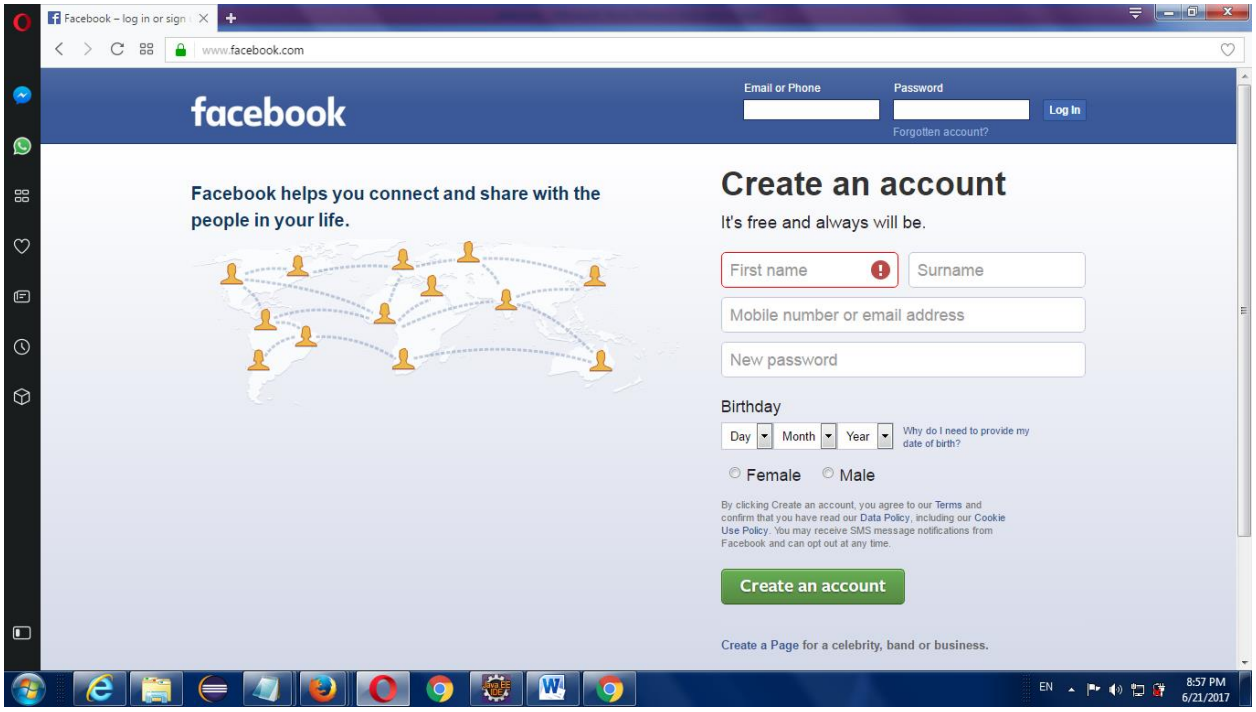
Opera Launching:

Opera-v46=opera driver-v2.27

```
public class Opera {

        public static void main(String[] args) {
```

```
        System.setProperty("webdriver.opera.driver","C:/Users/siva/workspace/Selenium/
driver/operadriver.exe" );


                WebDriver driver = new OperaDriver();
                driver.get("https://www.facebook.com/");
                driver.manage().window().maximize();
        }

}
```

Output:


Facebook – log in or sign
www.facebook.com
facebook
Email or Phone
Password
Log In
Forgotten account?
Facebook helps you connect and share with the people in your life.
Create an account
It's free and always will be.
First name
Surname
Mobile number or email address
New password
Birthday
Day
Month
Year
Why do I need to provide my date of birth?
Female
Male
By clicking Create an account, you agree to our Terms and confirm that you have read our Data Policy, including our Cookie Use Policy. You may receive SMS message notifications from Facebook and can opt out at any time.
Create an account
Create a Page for a celebrity, band or business.
EN
8:57 PM
6/21/2017

Write a Script to open and close the browser based on user input

```
public class Demo
{
        public static void main(String[] args) throws InterruptedException
        {
                Scanner sc = new Scanner(System.in);
```

```
		System.out.println("Enter brower Name:");
		String browser = sc.nextLine();

		WebDriver driver = null;

		if(browser.equals("Firefox"))
		{
			System.setProperty("webdriver.gecko.driver",
"./drivers/geckodriver.exe");
			driver = new FirefoxDriver();
		}
		else
		if(browser.equals("Chrome"))
		{
			System.setProperty("webdriver.chrome.driver",
"./drivers/chromedriver.exe");
			driver = new ChromeDriver();
		}
		else
		{
			System.out.println("Invalid browser");
		}
		Thread.sleep(2000);
		driver.close();
	}
}
```

Note: The above script is an example for Run Time Ploymorphism.

- To run same script on multiple browsers, we are converting sub class object into interface type(upcasting).

```
WebDriver driver = new ChromeDriver();

WebDriver driver = new FirefoxDriver();
```

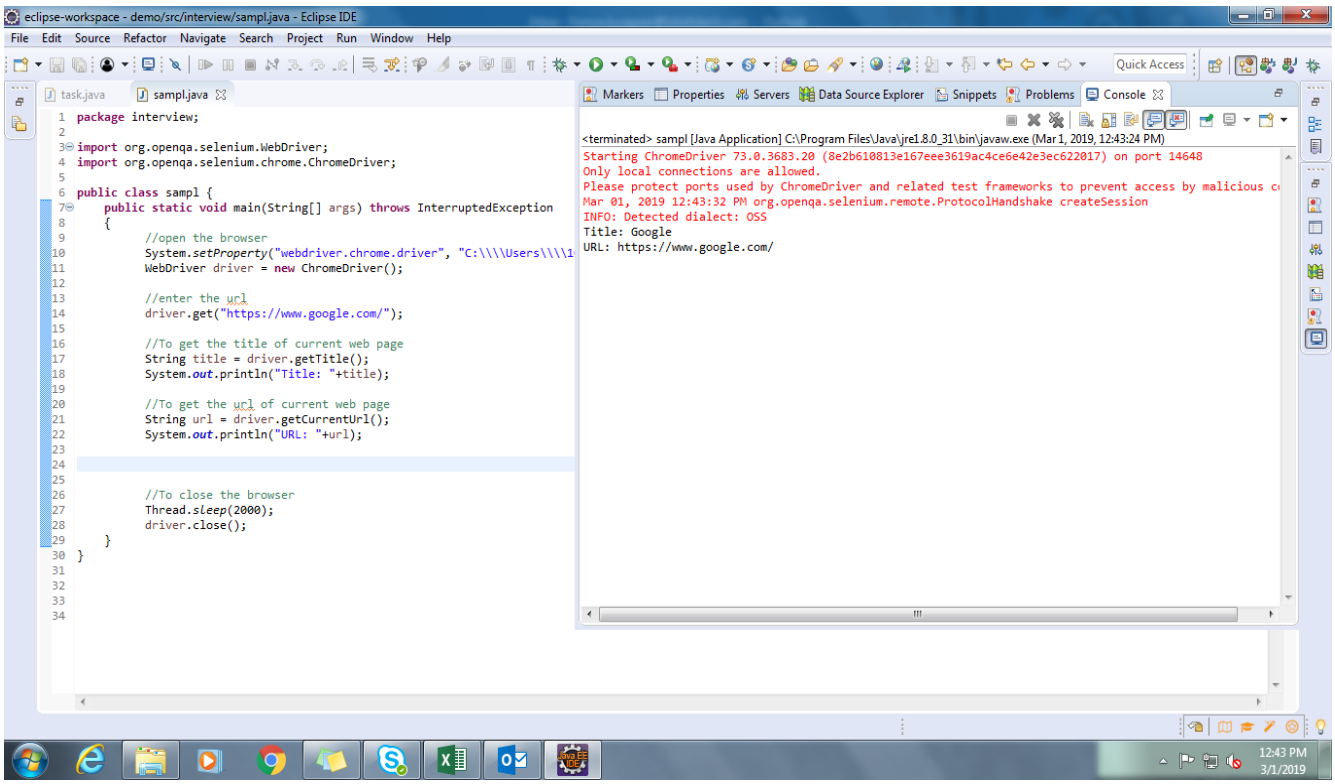
WEB DRIVER METHODS:

Methods of WebDriver Interface:

1	get()	To enter the url
2	getTitle()	To get the title of current web page
3	getCurrentUrl()	To get the url of current web page
4	getPageSource()	To get the page source of current web page
5	findElement()	To get single webElements
6	findElements()	To get multiple webElements
7	getWindowHandle()	To get the id of parent window
8	getWindowHandles()	To get the id of All windows
9	switchTo()	Used to switch one window to other window
10	manage()	1. Window 2. Cookies
11	navigate()	1. Enter the URL 2. Navigate to previous page 3. Navigate to next page 4. Refresh current web page
12	close()	To close the current/parent browser
13	quit()	To close all the browsers opened by selenium

```
public class Demo
{
	public static void main(String[] args) throws InterruptedException
	{
		//open the browser
		System.setProperty("webdriver.chrome.driver",
"./drivers/chromedriver.exe");
		WebDriver driver = new ChromeDriver();

		//enter the url
		driver.get("https://www.google.com/");

		//To get the title of current web page
		String title = driver.getTitle();
		System.out.println("Title: "+title);

		//To get the url of current web page
		String url = driver.getCurrentUrl();
		System.out.println("URL: "+url);
```

```
            //To close the browser
            Thread.sleep(2000);
            driver.close();
        }
}
```


eclipse-workspace - demo/src/interview/sampl.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
task.java
sampl.java
package interview;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;
public class sampl {
public static void main(String[] args) throws InterruptedException
{
//open the browser
System.setProperty("webdriver.chrome.driver", "C:\\\\Users\\\\1
WebDriver driver = new ChromeDriver();
//enter the url
driver.get("https://www.google.com/");
//To get the title of current web page
String title = driver.getTitle();
System.out.println("Title: "+title);
//To get the url of current web page
String url = driver.getCurrentUrl();
System.out.println("URL: "+url);
//To close the browser
Thread.sleep(2000);
driver.close();
}
}
Markers Properties Servers Data Source Explorer Snippets Problems Console
<terminated> sampl [Java Application] C:\Program Files\Java\jre1.8.0_31\bin\javaw.exe (Mar 1, 2019, 12:43:24 PM)
Starting ChromeDriver 73.0.3683.20 (8e2b610813e167eee3619ac4ce6e42e3ec622017) on port 14648
Only local connections are allowed.
Please protect ports used by ChromeDriver and related test frameworks to prevent access by malicious c
Mar 01, 2019 12:43:32 PM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: OSS
Title: Google
URL: https://www.google.com/
12:43 PM
3/1/2019

Write a script for the following:

- **Open the browser**
- **Delete all cookies**
- **Set size of the window**
- **Set position of the window**
- **Maximize the window**

```
public class Demo
{
        public static void main(String[] args) throws InterruptedException
        {
```

```
		//To open the browser
		System.setProperty("webdriver.chrome.driver",
"./drivers/chromedriver.exe");
		WebDriver driver = new ChromeDriver();
		Thread.sleep(2000);

		//To delete cookies
		driver.manage().deleteAllCookies();

		//To set the size of the window
		Dimension d = new Dimension(500, 500);
		driver.manage().window().setSize(d);
		Thread.sleep(2000);

		//To set the position of the window
		Point p = new Point(250, 250);
		driver.manage().window().setPosition(p);
		Thread.sleep(2000);

		//To maximize the window
		driver.manage().window().maximize();
	}
}
```

NAVIGATION COMMANDS

1. Navigate().to()
2. Refresh()
3. Back()
4. Forword()

```
public class Demo
{
	public static void main(String[] args) throws InterruptedException
	{
		//open the browser
		System.setProperty("webdriver.chrome.driver",
"./drivers/chromedriver.exe");
		WebDriver driver = new ChromeDriver();

		//To maximize the window
		driver.manage().window().maximize();

		//To delete the cookies
```

```
                driver.manage().deleteAllCookies();

                driver.get("https://www.google.com/");

                //To enter the url
                driver.navigate().to("https://www.facebook.com/");
                Thread.sleep(1000);


                //To navigate to previous page
                driver.navigate().back();
                Thread.sleep(1000);

                //To navigate to next page
                driver.navigate().forward();
                Thread.sleep(1000);

                //Refresh current web page
                driver.navigate().refresh();
        }
}


public class Demo
{
        public static void main(String[] args) throws InterruptedException
        {
                //open the browser
                System.setProperty("webdriver.chrome.driver",
"./drivers/chromedriver.exe");
                WebDriver driver = new ChromeDriver();
                driver.manage().window().maximize();
                driver.get("https://www.naukri.com/");

                Thread.sleep(2000);

                //To close all the browsers
                driver.quit();
        }
}
```

Difference Between get() and navigate():

get	navigate
It will just enter the URL	1. It will enter the URL 2. It will navigate to previous page 3. It will navigate to next page 4. It will refresh the current web page
After entering the URL it will not allow any statements to execute untill the page loads completely	After entering the URL it will not wait untill the page loads completely

WEBELEMENTS METHODS:

WebElement:

- Anything which is present on the webpage is called as webelement.
  Ex: text box, link, image, listbox, checkbox etc,
- These Web elements are developed by using HTML.
- HTML stands for HyperText Markup Language.
- The components of HTML are,
  i) Tags
  ii) Attributes
  iii) Text

We can develop the web pages by using the notepad.

Steps to create web pages.

1. Open the notepad

2. Write the html code

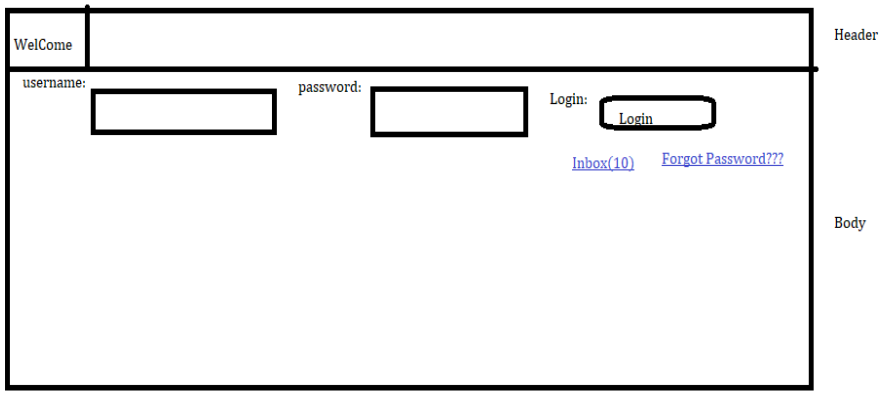
3. Save the file with .html

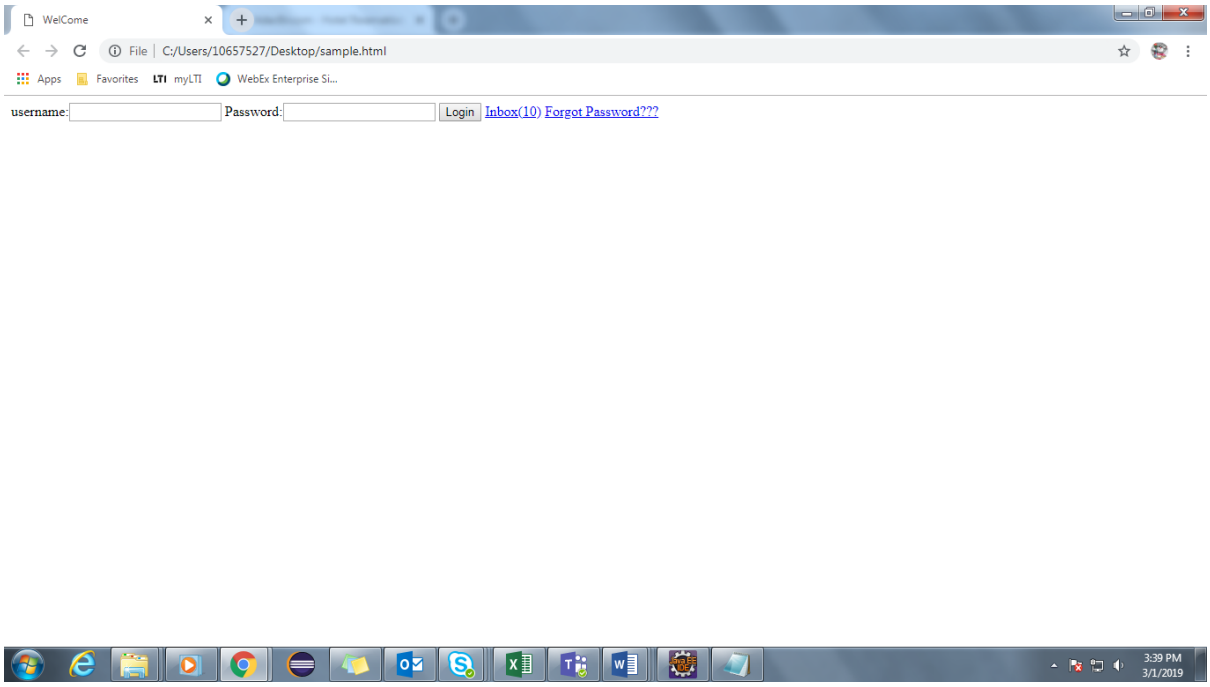
4. Open the file with any web browsers

Ex:

```
<html>
    <head>
```

```
        <title>WelCome</title>
    </head>
    <body>
        username:<input type="text">
        Password:<input type="password">
        <input type="button" value="Login">
        <a href="http://www.gmail.com">Inbox(10)</a>
        <a href="http://www.google.com" id="fp" name="forgot" class="pass">Forgot Password???</a>
    </body>
</html>
```





Before performing action on any elements, we have to perform following steps.

1. Inspect the element
2. Identify/locate the element
3. Find the element
4. Perform the action

Inspect the element:

- Fetching the source code of an element is called as inspect the element.
- To inspect the elements, Right click on element→ click on Inspect element, which will give source code of that element
- In some applications, for security purpose right click option will be disabled. In such cases
  - Press F12 which will open developers tool
  - Select inspect button(mouse icon available on top left corner)
  - click on the element

Methods of WebEleent Interface:

1	sendKeys()	1.To enter the value in textbox 2. To Handle some keyboard action
2	clear()	To clear the textbox value
3	Click()	To click the particular webElement(Button)
4	getCssValue()	To get the color/size/font of the particular webelement
5	findElement()	To get single webElements
6	findElements()	To get multiple webElements
7	getText()	To get the text of the particular webelement
8	getAttribute()	To get the text of the particular attribute(id, name, value…etc)
9	getTagName()	To get the tagname of particular webelement
10	getLocation()	To get the X axis and Y axis location of particular webelement
11	getSize()	To get the size of particular webelement(textbox, text…etc)
12	isDisplayed()	To check whether the particular webelement is displaying or not(logo, textbox, text…etc)
13	isEnabled()	To check whether the textbox is enabled to enter the text or not
14	isSelected()	To check whether the radiobutton/dropdown is selected or not
15	submit()	To click on an element only if the type of the element is submit Ex: <input type="submit" id="s" value="Submit">

LOCATORS:

- Static methods which are used to identify the elements which are present the webpage.
- All these locators are present in a class called **By** which is an Abstract class.
- There are 8 types of locators and all the locators takes argument of type string. They are,
  1. Id(String)
  2. name(String)
  3. className(String)
  4. tagName(String)
  5. linkText(String)
  6. partialLinkText(String)
  7. cssSelector(String)
  8. xpath(String)

Note:

- Id, name, className are available as attributes of an element.
- In order to Handle the single element we use findElement().
- Return type of findElement() is WebElement.
- In findElement(), if the specified locator is not matching with any element it will throw NoSuchElementException
- In findElement(), if the specified locator is matching with multiple element it will return the address of 1st matching element
- If the specified element is link, then we can identify that element by using linkText
- If the specified element is link and if it partially dynamic, then we can identify that element by using partialLinkText

cssSelector

- If we can not identify the elements by using any of the above locators, then we can identify that element by using cssSelector.
- Syntax:
    - tagnName[attributeName='attributeValue']

    ex: input[type='password']

- In order to verify cssSelector expression in firefox browser, click on TX→select queryselectorAll option→ specify the expression in expression field and click on enter

Note:

- In cssSelector,
    - Id can be represented by using #,
      Ex:- input#email
    - Class can be represented by using .
      Ex:- tagName.classValue

Ex,

Adactin hotel login using id/name:

```
public class Login {

    public static void main(String[] args) throws Throwable {

        System.setProperty("webdriver.chrome.driver",
                "C:\\Users\\10657527\\Downloads\\chromedriver_win32 (1)\\chromedriver.exe");
```

```
                WebDriver driver = new ChromeDriver();

                driver.get("https://adactin.com/HotelApp/index.php");

                driver.manage().window().maximize();

                WebElement x = driver.findElement(By.id("username"));

                x.sendKeys("vengatram");

                WebElement x1 = driver.findElement(By.name("password"));

                x1.sendKeys("vengat@123445");

                WebElement x2 = driver.findElement(By.id("login"));

                x2.click();


        }
}
```

LinkText:

Forgot Password?

Text: >Forgot Password?<

linkText: Text which is available in **a** tag called linktext.

```
public class Login {

        public static void main(String[] args) throws Throwable {

                System.setProperty("webdriver.chrome.driver",
                                "C:\\Users\\10657527\\Downloads\\chromedriver_win32
(1)\\chromedriver.exe");
                WebDriver driver = new ChromeDriver();

                driver.get("https://adactin.com/HotelApp/index.php");

                driver.manage().window().maximize();
```

```
		WebElement x2 = driver.findElement(By.linkText("Forgot Password?"));

		x2.click();



	}
}
```

PartialLinkText:

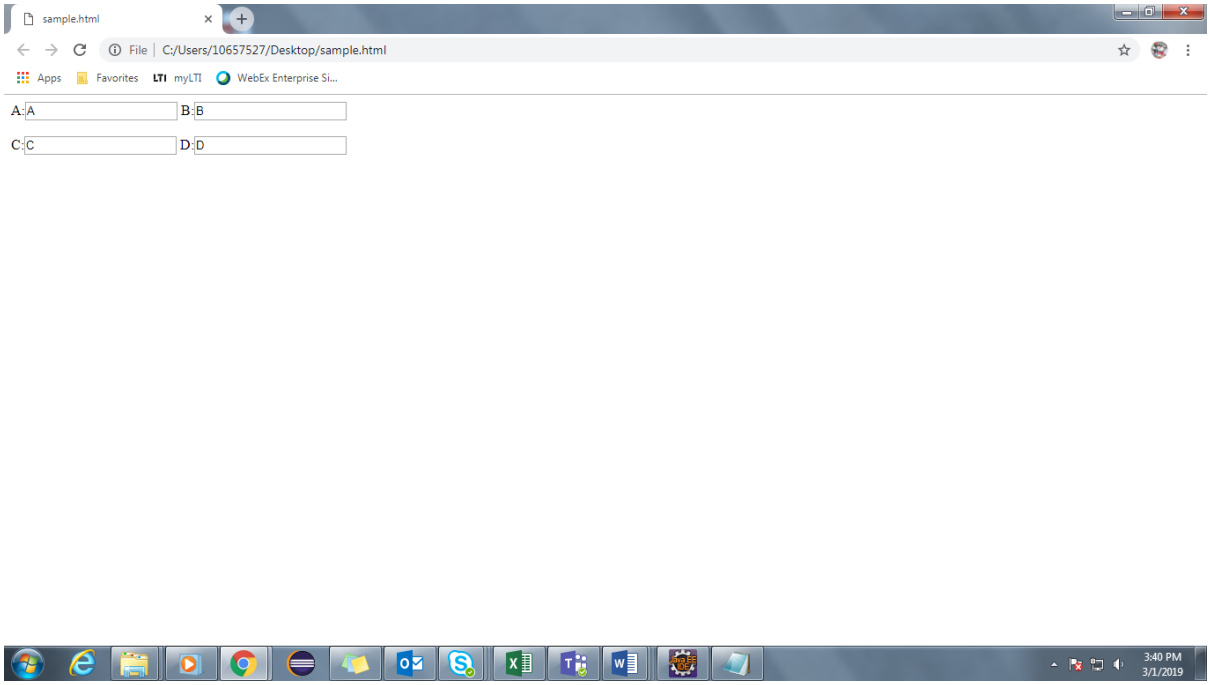
```
package com.lnt.test;

import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.chrome.ChromeDriver;


public class Login {

	public static void main(String[] args) throws Throwable {

		System.setProperty("webdriver.chrome.driver",
				"C:\\Users\\10657527\\Downloads\\chromedriver_win32
(1)\\chromedriver.exe");
		WebDriver driver = new ChromeDriver();

		driver.get("https://adactin.com/HotelApp/index.php");

		driver.manage().window().maximize();

		WebElement x2 = driver.findElement(By.partialLinkText("Forgot"));

		x2.click();



	}
}
```

Xpath:

- Path of an element present in the webpage.
    - Absolute
    - Relative

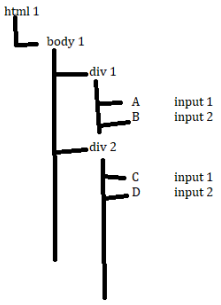
Sample webpage:

```
<div>
        A:<input type="text" value="A">
        B:<input type="text" value="B">
</div><br/>
<div>
        C:<input type="text" value="C">
        D:<input type="text" value="D">
</div>
```



In selenium, we represent the webpage in the form of HTML Tree Structure.

Ex:



<u>Absolute</u>:

- Complete path of an element from root of the webpage(html)
- Represented by using /--> immediate child

Ex:

/html/body/div[1]/input[2]

<u>Relative xpath:</u>

- Path of any element which is present on web page.
- It is represented by using // which means any child/element

Syntax:

1. //tagName→ all the matching elements
2. //tagName[1]→ all the 1st matching elements
3. //tagName[last()]→ all the last matching elements
4. //*→ all the elements
5. //*[@attribute='value']
6. //tagName[@attribute='value']

Ex:

//div[1]/input[2]
//div[1]/input
//div[2]/input
//input[1]
//div[1]/input[2]| //div[2]/input
//input

Xpath by attribute:

- To identify the specified elements, if we use index it may not work properly when we use the index values because whenever the position of an element changes its index value will also changes.
- To overcome the above problem in place of index we can include attributes which is called as xpath by attributes.
- It is applicable for both Absolute and Relative xpath.
- **Syntax**:
  - tagName[@attributeName=’attributeValue’]
- **Example**:
  - Absolute→ /html/body/div/input[@value='B']
  - Relative→ //input[@value='B']
- In an xpath we can pass multiple attributes by using or operator.
- **Example**:
  - //input[@value='B' or @value='C']

Assignment:

- **Derive the xpath expression for the elements which are present in FaceBook login or sign up page.**
  - Email or Phone: //input[@type='email']
  - Day list box: //select[@aria-label='Day']
  - Male: //input[@value='2']

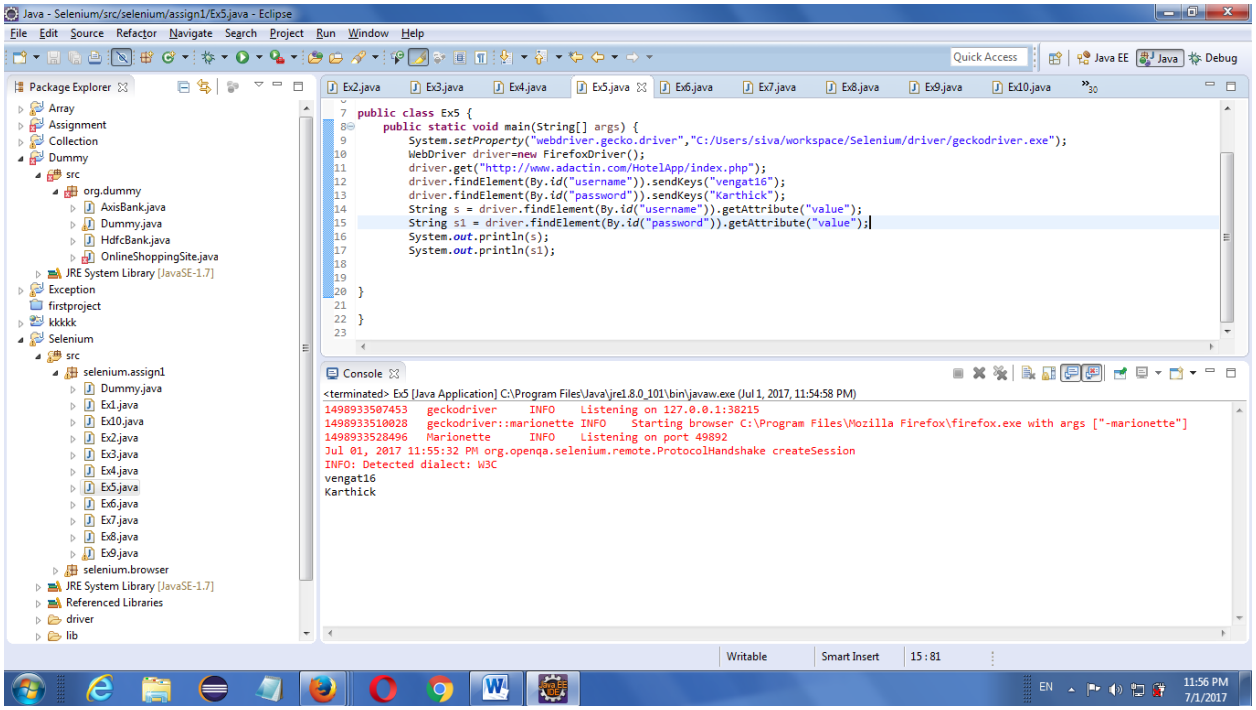
getAttribute() and getText():

It is a method, used to print the value whatever you gave in the text box

Example program:

```
public class Ex5 {
	public static void main(String[] args) {

	System.setProperty("webdriver.gecko.driver","C:/Users/siva/workspace/Selenium/
driver/geckodriver.exe");
		WebDriver driver=new FirefoxDriver();
		driver.get("http://www.adactin.com/HotelApp/index.php");
		driver.findElement(By.id("username")).sendKeys("vengat16");
		driver.findElement(By.id("password")).sendKeys("Karthick");
		String s = driver.findElement(By.id("username")).getAttribute("value");
		String s1 = driver.findElement(By.id("password")).getAttribute("value");
		System.out.println(s);
		System.out.println(s1);
}
}
```

Output:



NoSuchElementException:

- It is throws when particular id/xpath/class or whatever is not available in DOM structure

isDisplayed():

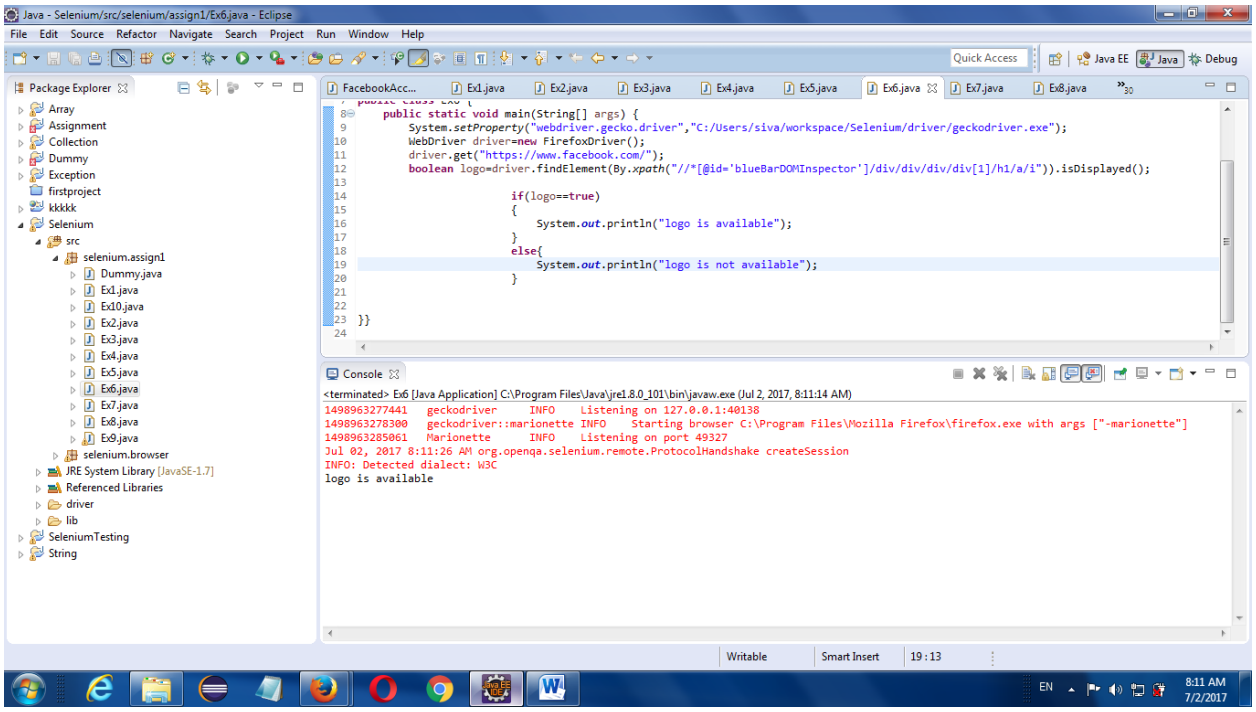
It is a method, used to check the particular id/value is available or not

Example program:

```
public class Ex6 {
	public static void main(String[] args) {

	System.setProperty("webdriver.gecko.driver","C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver=new FirefoxDriver();
		driver.get("https://www.facebook.com/");
```

```
boolean logo=driver.findElement(By.xpath("//*[@id='blueBarDOMInspector']/div/div/div/div[1]/h1/a/i")).isDisplayed();

                                        if(logo==true)
                                        {
                                        System.out.println("logo is available");
                                        }
                                        else{
                                        System.out.println("logo is not available");
                                        }

}}
```

Output:



<u>isEnabled:</u>

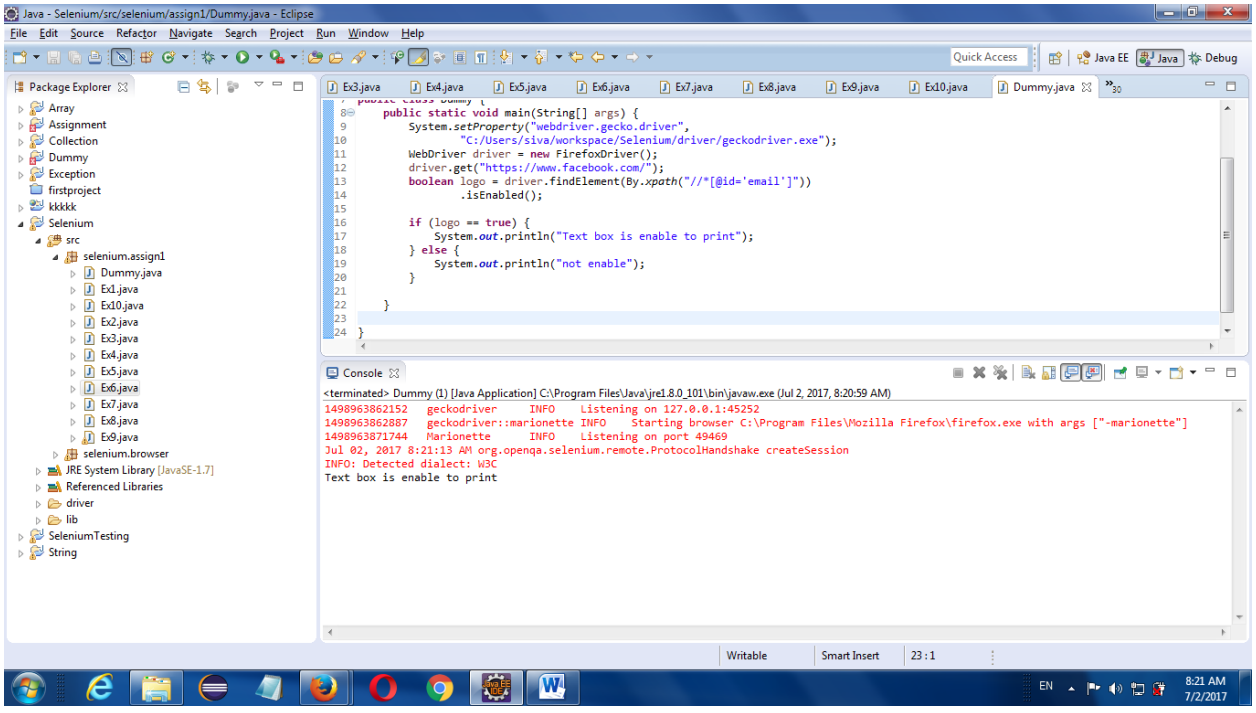
- It is a method, is used to check particular text box is enable to print or not

Example program:

```
public class Dummy {
```

```
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("https://www.facebook.com/");
		boolean logo = driver.findElement(By.xpath("//*[@id='email']"))
				.isEnabled();

		if (logo == true) {
			System.out.println("Text box is enable to print");
		} else {
			System.out.println("not enable");
		}

	}

}
```

Output:


Java - Selenium/src/selenium/assign1/Dummy.java - Eclipse
Console
<terminated> Dummy (1) [Java Application] C:\Program Files\Java\jre1.8.0_101\bin\javaw.exe (Jul 2, 2017, 8:20:59 AM)
1498963862152 geckodriver INFO Listening on 127.0.0.1:45252
1498963862887 geckodriver::marionette INFO Starting browser C:\Program Files\Mozilla Firefox\firefox.exe with args ["-marionette"]
1498963871744 Marionette INFO Listening on port 49469
Jul 02, 2017 8:21:13 AM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
Text box is enable to print

isSelected:

- It is a method, used to check the particular radio button is selected or not

Example program:

```
public class Dummy {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("https://www.facebook.com/");
		driver.findElement(By.xpath("//*[@id='u_0_g']"))
		.click();
		boolean logo = driver.findElement(By.xpath("//*[@id='u_0_g']"))
				.isSelected();
		if (logo == true) {
			System.out.println("button is selected");
		} else {
			System.out.println("not selected");
		}

	}}
```

Xpath by text():

- If the specified element does not contain any attributes and if it contains text then we can identify that element by using xpath by text()
- It is applicable for both absolute and relative xpath
- Syntax:
  - tagName[text()='textValue']
- Example:
  - //td[text()='Java']
- text() can be represented by using dot(.)
- Example:
  - //td[.='Java']
- Attribute values and the text values are case and space sensitive.
- Example:
  - //div[text()='Login ']

Xpath by contains():

- It is used to handle the partial dynamic elements
- It is applicable for both absolute and relative xpath.
- **Syntax 1**: if text value is partially dynamic,
    - **tagName[contains(text(),'textValue')]**
- **Example:**
    - //nobr[contains(text(),'actiTIME')]
- **Syntax 2:** if attribute value is partially dynamic,
    - **tagName[contains(@attributeName,'attributeValue')]**
- **Example:**
    - **//img[contains(@src,'/img/default/login/timer.png?hash')]**

Handling special characters:

- While developing the application developers will be using some special characters like &amp,   etc.
- If the element contains any special characters then we can identify that element by using xpath by contains().
- If any value contains & symbol then it is the special character.
- **Example:** Derive the xpath to identify Forgotten Password? Link present on facebook login or sign up page.
    - //a[contains(@href,'https://www.facebook.com/recover/initiate?lwv')]

Traversing:

- Navigating from one element to another element using xpath is called traversing.
- To navigate from one element to another element xpath uses axis.
- The different types of axis are,
    1. child
    2. parent
    3. descendant
    4. ancestor
    5. following-sibling
    6. preceding-sibling

- Syntax:

    /axis::tagName

Sample web page:

```
<select>
        <option value="j">Jan</option>
        <option value="f">Feb</option>
        <option value="m">Mar</option>
        <option value="a">Apr</option>
        <option value="m">May</option>
</select>
```

Child:

- Navigate from one element to it's immediate child.
  Ex: //select//child::option[1]

Parent:

- Navigate from one element to it's immediate parent.

  Ex: //select[@option='j']//parent::select

Descendant:

- Navigate from one element to any of it's child present on the webpage.
  Ex: /html/descendant::option[1]

Ancestor:

- Navigate from one element to any of it's parent present on the webpage.
  Ex: //select[@option='j']/ancestor::html

Following-sibilng:

- The elements which are present below the specified element, under same parent are called as following-sibling.
  Ex:
  //select[@option='m']/following-sibling::option→ A,M
  //select[@option='m']/following-sibling::option[1]→ A
  //select[@option='m']/following-sibling::option[2]→ M

Preceding-sibling:

- The elements which are present above the specified element, under same parent are called as following-sibling.
  Ex:

//select[@option='m']/preceding-sibling::option→ J,F
//select[@option='m']/preceding-sibling::option[1]→ F
//select[@option='m']/preceding-sibling::option[2]→ J

Radio button:

- We can able to select only one at a time

Example program:

```
public class Dummy {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",
			"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("https://www.facebook.com/");
		driver.findElement(By.xpath("//*[@id='u_0_g']"))
		.click();
}}
```

Xpath:

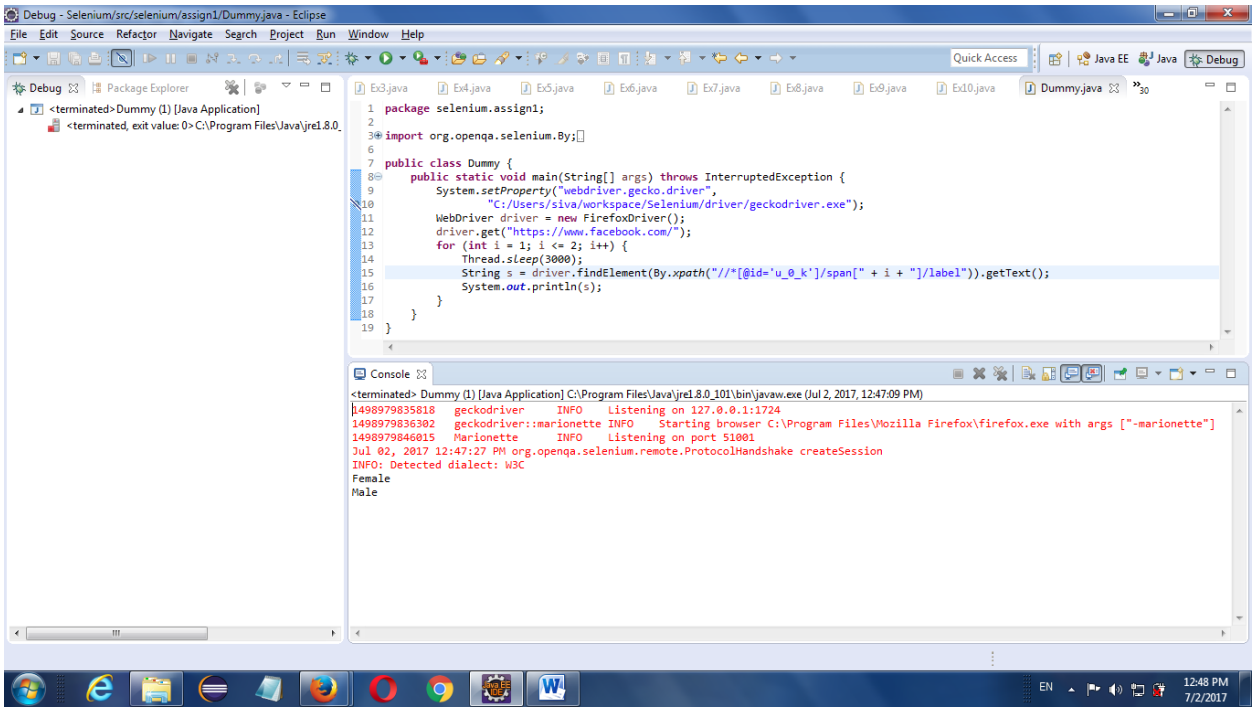
- Structure or combination of absolute path and relative path

To print both radio button:

Example program:

```
public class Dummy {
	public static void main(String[] args) throws InterruptedException {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("https://www.facebook.com/");
		for (int i = 1; i <= 2; i++) {
			Thread.sleep(3000);
			String s = driver.findElement(
					By.xpath("//*[@id='u_0_k']/span[" + i + "]/label"))
					.getText();
			System.out.println(s);
		}
	}}
```

Output:



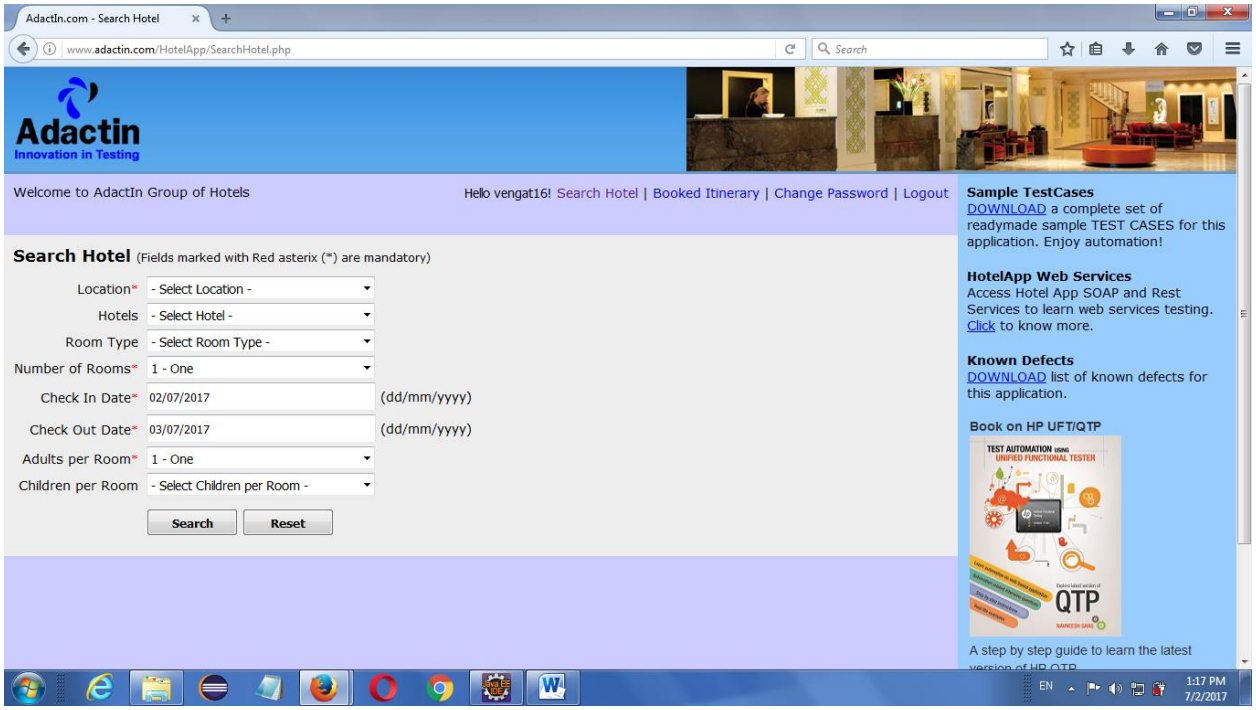
EXERCISE 1:

Program 1: Go to adactin.com website and give username &password and login

Program:

```
public class Ex3 {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("http://www.adactin.com/HotelApp/index.php");
		driver.findElement(By.id("username")).sendKeys("vengat16");
		driver.findElement(By.id("password")).sendKeys("Karthick");
		driver.findElement(By.id("login")).click();

	}

}
```

Output

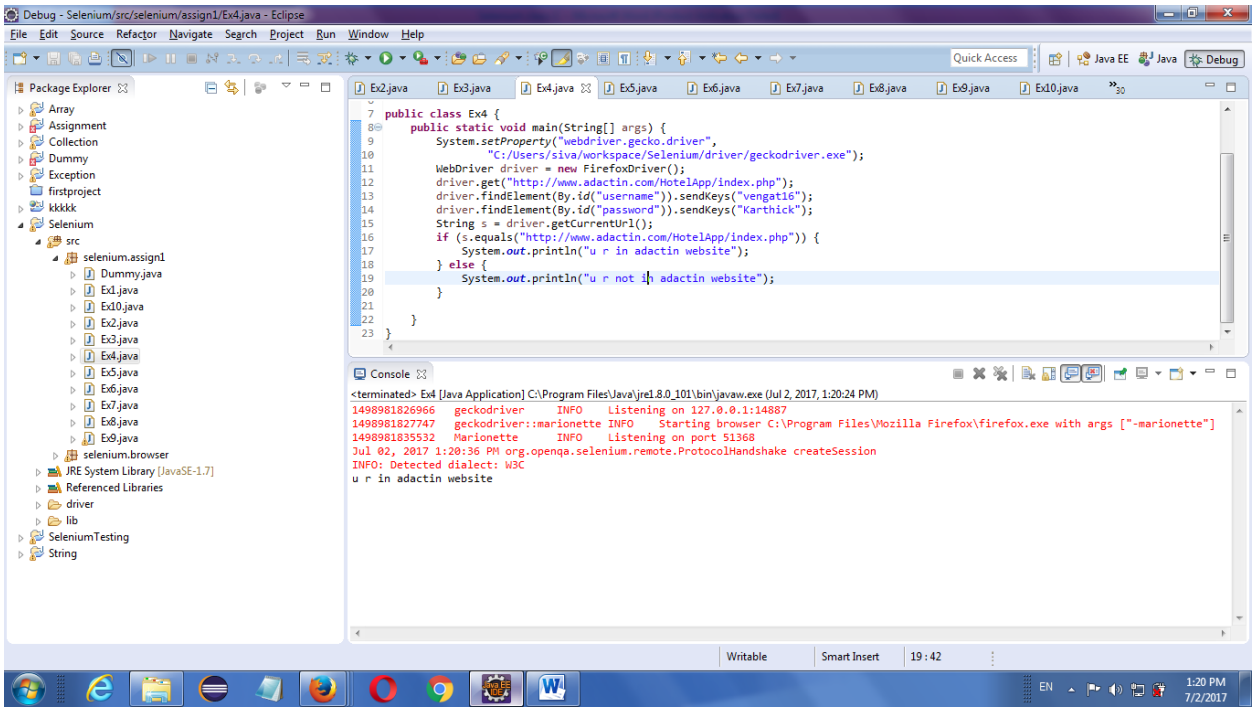

AdactIn.com - Search Hotel
www.adactin.com/HotelApp/SearchHotel.php
Adactin
Innovation in Testing
Welcome to AdactIn Group of Hotels
Hello vengat16! Search Hotel | Booked Itinerary | Change Password | Logout
Search Hotel (Fields marked with Red asterix (*) are mandatory)
Location* - Select Location -
Hotels - Select Hotel -
Room Type - Select Room Type -
Number of Rooms* 1 - One
Check In Date* 02/07/2017 (dd/mm/yyyy)
Check Out Date* 03/07/2017 (dd/mm/yyyy)
Adults per Room* 1 - One
Children per Room - Select Children per Room -
Search
Reset
Sample TestCases
DOWNLOAD a complete set of readymade sample TEST CASES for this application. Enjoy automation!
HotelApp Web Services
Access Hotel App SOAP and Rest Services to learn web services testing. Click to know more.
Known Defects
DOWNLOAD list of known defects for this application.
Book on HP UFT/QTP
TEST AUTOMATION USING UNIFIED FUNCTIONAL TESTER
QTP
A step by step guide to learn the latest
1:17 PM
7/2/2017

Program 2: ***Go to adactin.com website and check that same webpage is opened***

Program:

```
public class Ex4 {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("http://www.adactin.com/HotelApp/index.php");
		driver.findElement(By.id("username")).sendKeys("vengat16");
		driver.findElement(By.id("password")).sendKeys("Karthick");
		String s = driver.getCurrentUrl();
		if (s.equals("http://www.adactin.com/HotelApp/index.php")) {
			System.out.println("u r in adactin website");
		} else {
			System.out.println("u r not in adactin website");
		}}}
```

Output

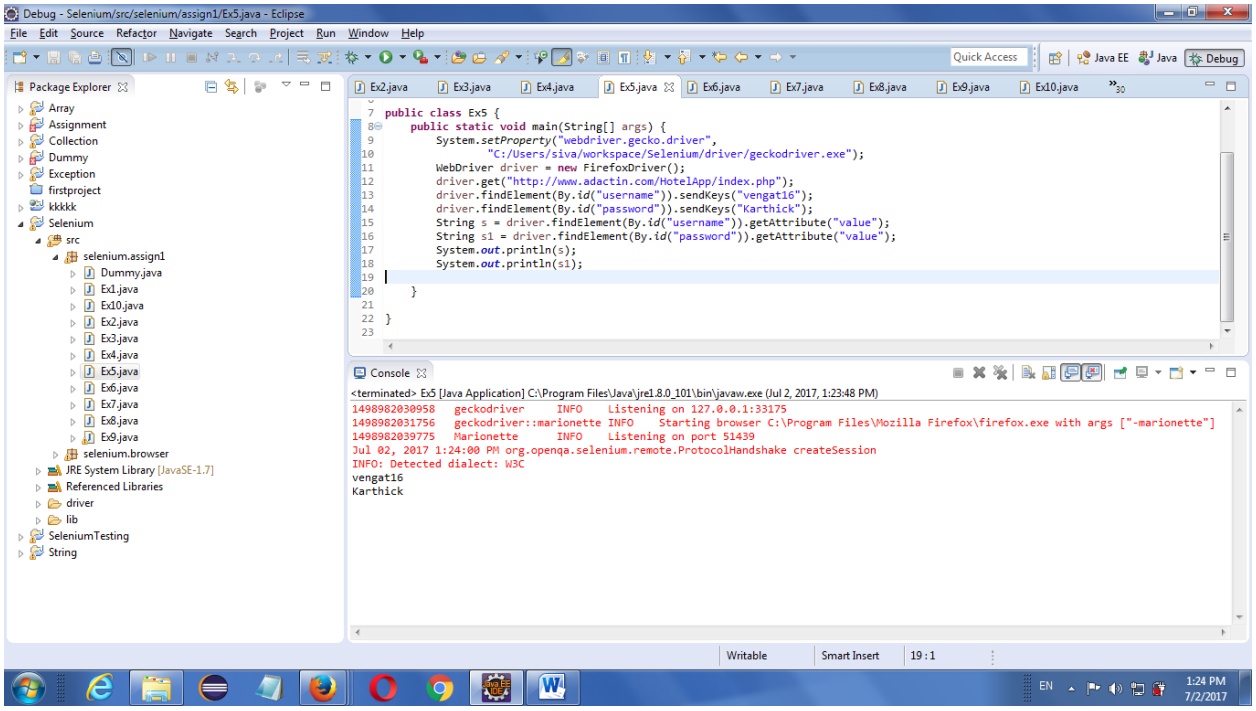


Program 3: ***Go to adactin.com website, give user name & password and print that user name and password***

Program:

```
public class Ex5 {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("http://www.adactin.com/HotelApp/index.php");
		driver.findElement(By.id("username")).sendKeys("vengat16");
		driver.findElement(By.id("password")).sendKeys("Karthick");
		String s = driver.findElement(By.id("username")).getAttribute("value");
		String s1 = driver.findElement(By.id("password")).getAttribute("value");
		System.out.println(s);
		System.out.println(s1);
}}
```

Output



Program 4: Facebook registration

Program:

```
public class Ex10 {
	public static void main(String[] args) {

	System.setProperty("webdriver.gecko.driver","C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver=new FirefoxDriver();
		driver.get("https://www.facebook.com/");

	driver.findElement(By.xpath("//input[@name='firstname']")).sendKeys("Vengat");

	driver.findElement(By.xpath("//input[@name='lastname']")).sendKeys("Ram");

	driver.findElement(By.xpath("//input[@name='reg_email__']")).sendKeys("9876543210");

	driver.findElement(By.xpath("//input[@name='reg_passwd__']")).sendKeys("123456");


	driver.findElement(By.xpath("//label[contains(text(),'Male')]")).click();
```

```
        driver.findElement(By.xpath("//button[@type='submit']")).click();
        }
}
```

Output

Facebook – log in or sign up
https://www.facebook.com
facebook
Email or Phone
Password
Log In
Forgotten account?
Facebook helps you connect and share with the people in your life.
Create an account
It's free and always will be.
Vengat
Ram
9876543210
Birthday
Day
Month
Year
Why do I need to provide my date of birth?
Select your date of birth. You can change who can see this later.
Female
Male
By clicking Create an account, you agree to our Terms and confirm that you have read our Data Policy, including our Cookie Use Policy. You may receive SMS message notifications from Facebook and can opt out at any time.
Create an account
Create a Page for a celebrity, band or business.
EN
1:29 PM
7/2/2017

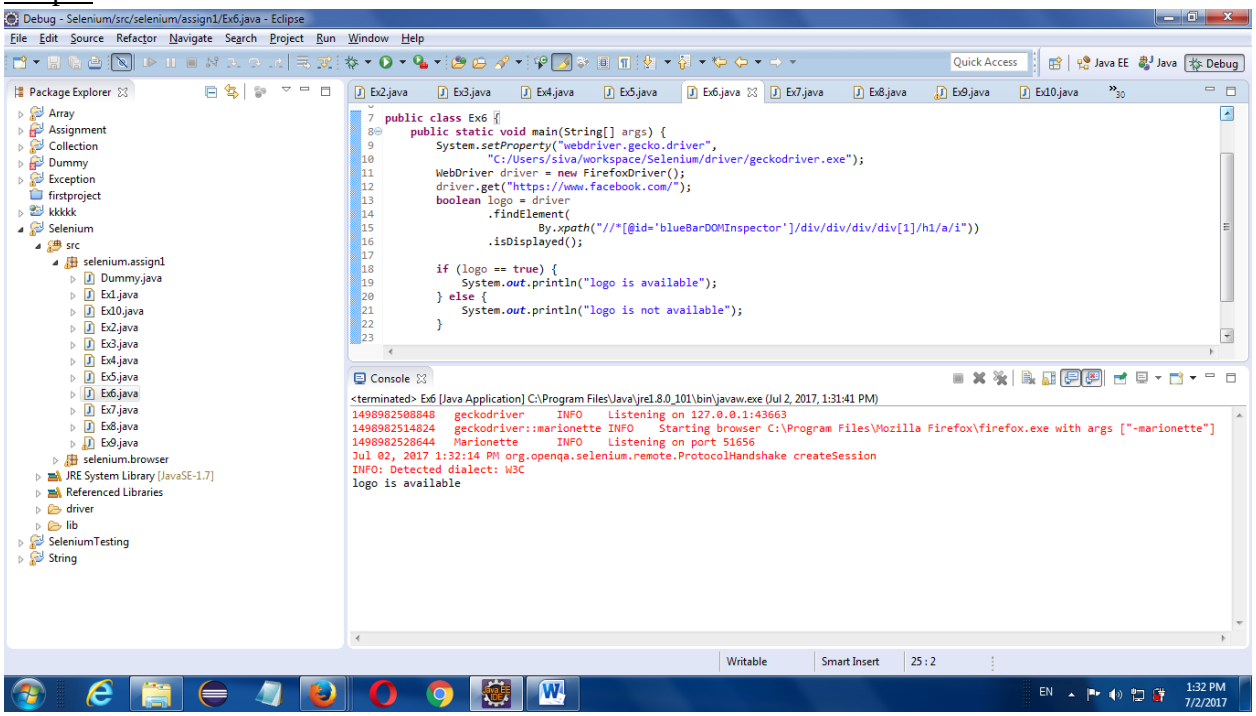
Program 5: ***Go to facebook.com, check the facebook logo is available or not***

Program:

```
ublic class Ex6 {
        public static void main(String[] args) {
                System.setProperty("webdriver.gecko.driver",

        "C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
                WebDriver driver = new FirefoxDriver();
                driver.get("https://www.facebook.com/");
                boolean logo = driver
                                .findElement(

        By.xpath("//*[@id='blueBarDOMInspector']/div/div/div/div[1]/h1/a/i"))
                                .isDisplayed();
```

```
        if (logo == true) {
                System.out.println("logo is available");
        } else {
                System.out.println("logo is not available");
        }

    }
}
```

Output



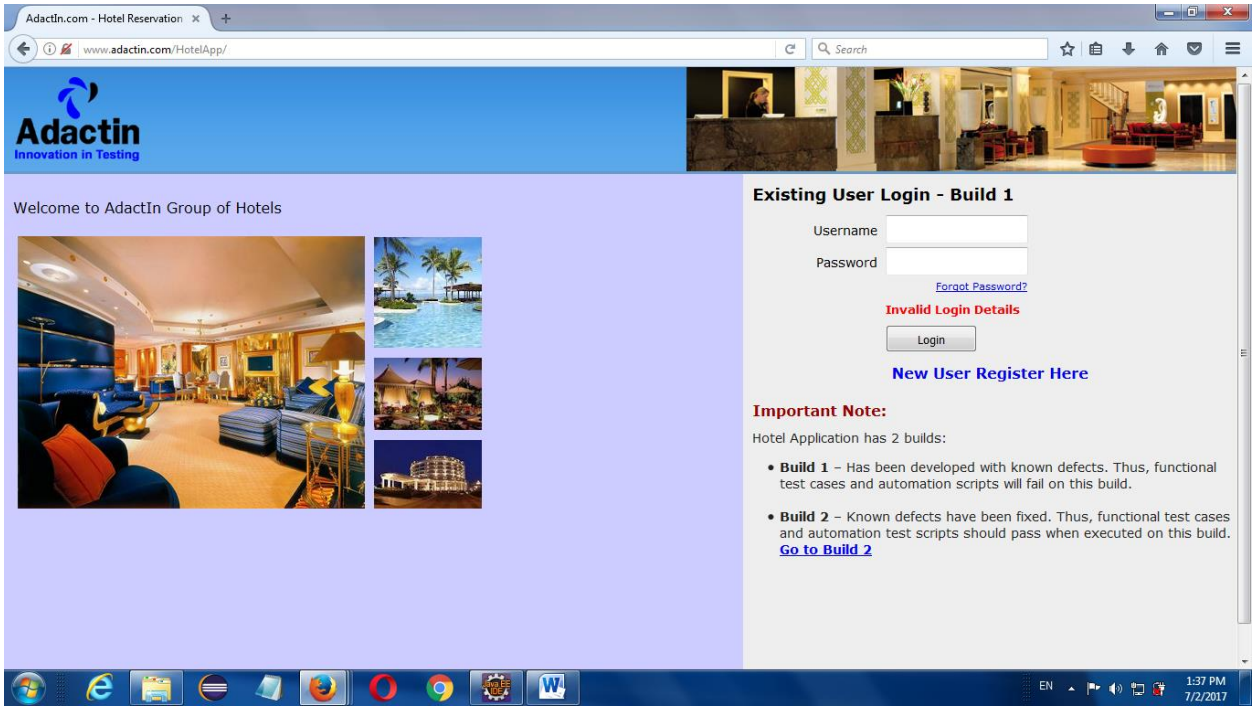
Program 6: Go to adactin.com website, give wrong user name & password and click login. Check the error msg(invalid login details) shown or not)

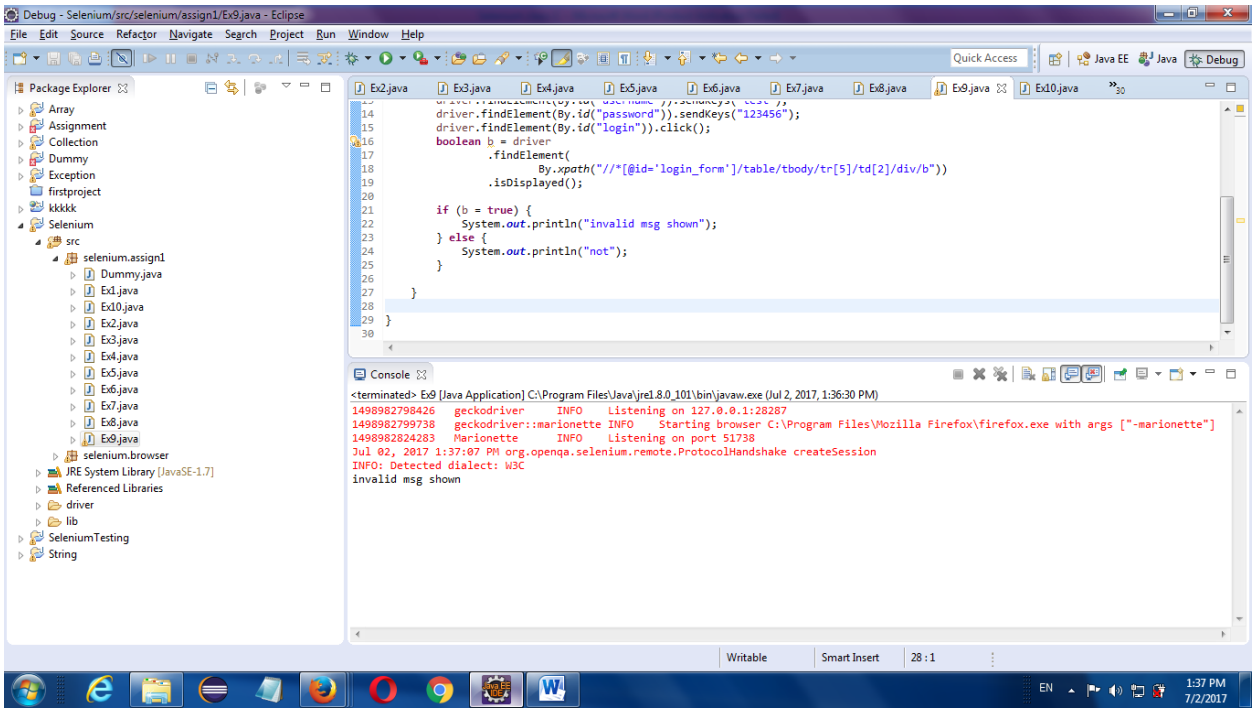
Program:

```
public class Ex9 {
        public static void main(String[] args) {
                System.setProperty("webdriver.gecko.driver",

        "C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
                WebDriver driver = new FirefoxDriver();
                driver.get("http://www.adactin.com/HotelApp/");
                driver.findElement(By.id("username")).sendKeys("test");
                driver.findElement(By.id("password")).sendKeys("123456");
                driver.findElement(By.id("login")).click();
```

```
                boolean b = driver
                                .findElement(

        By.xpath("//*[@id='login_form']/table/tbody/tr[5]/td[2]/div/b"))
                                .isDisplayed();

                if (b = true) {
                        System.out.println("invalid msg shown");
                } else {
                        System.out.println("not");
                }
}}
```

Output


AdactIn.com - Hotel Reservation
www.adactin.com/HotelApp/
Search
Adactin
Innovation in Testing
Welcome to AdactIn Group of Hotels
Existing User Login - Build 1
Username
Password
Forgot Password?
Invalid Login Details
Login
New User Register Here
Important Note:
Hotel Application has 2 builds:
Build 1 – Has been developed with known defects. Thus, functional test cases and automation scripts will fail on this build.
Build 2 – Known defects have been fixed. Thus, functional test cases and automation test scripts should pass when executed on this build.
Go to Build 2
EN
1:37 PM
7/2/2017

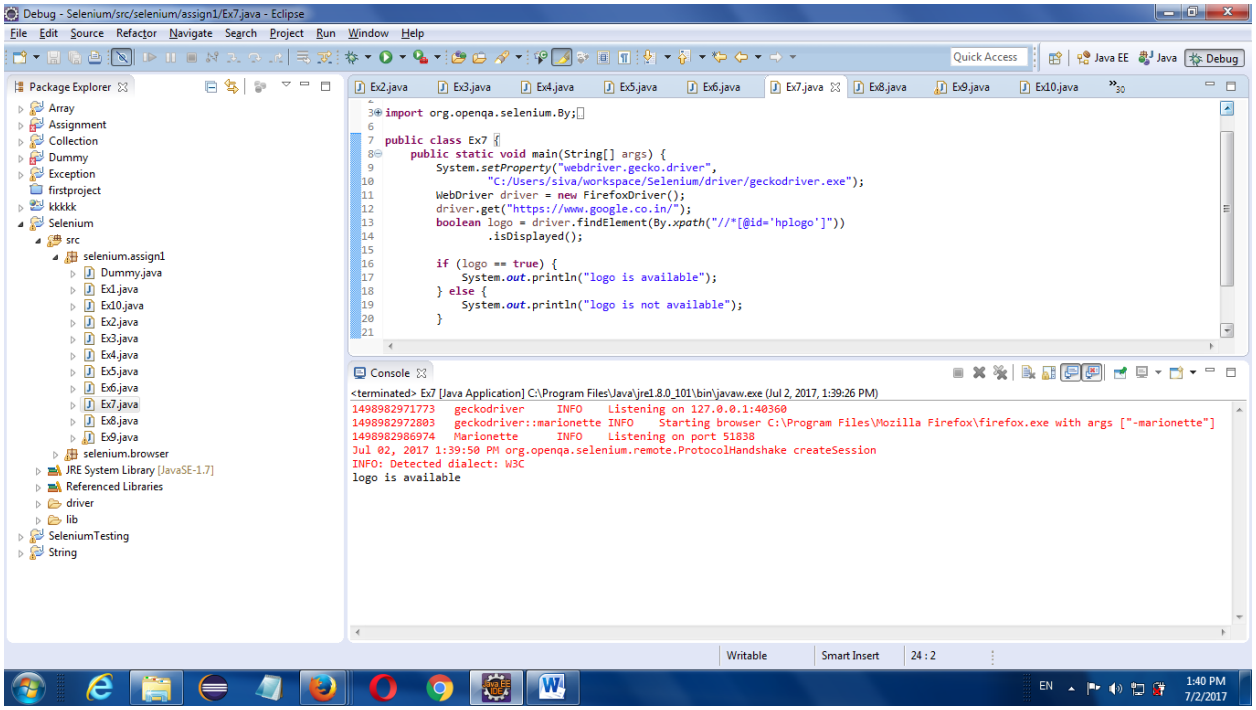


Program 7: Go to google.com, check the google logo is available or not

Program:

```
public class Ex7 {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("https://www.google.co.in/");
		boolean logo = driver.findElement(By.xpath("//*[@id='hplogo']"))
				.isDisplayed();

		if (logo == true) {
			System.out.println("logo is available");
		} else {
			System.out.println("logo is not available");
		}

	}

}
```

Output

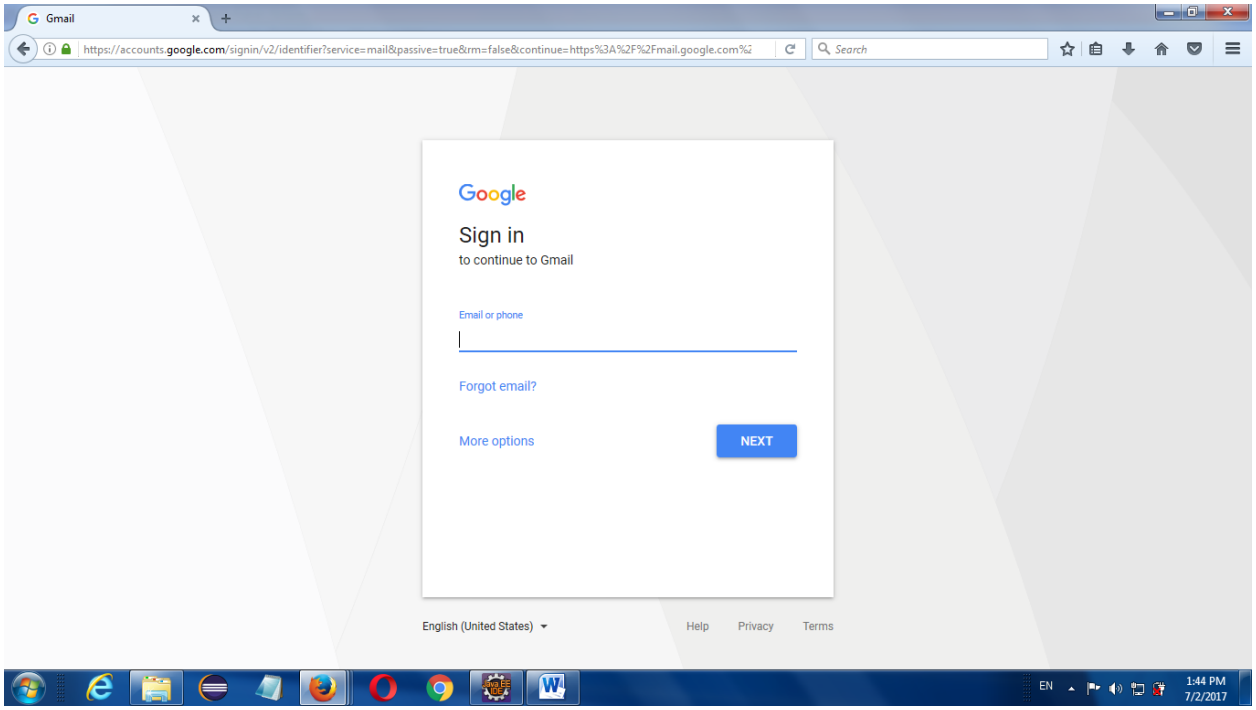


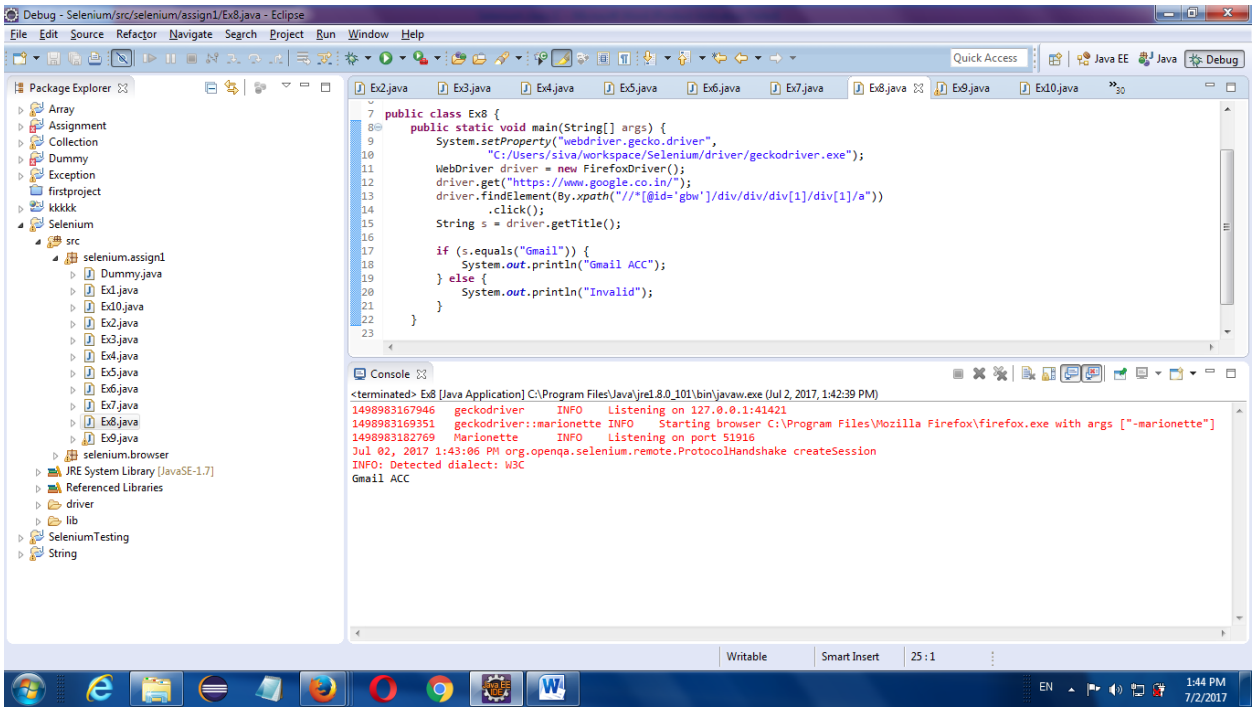
Program 8: ***Go to google.com, click gmail and check the title is Gmail or not***

Program:

```
public class Ex8 {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("https://www.google.co.in/");
		driver.findElement(By.xpath("//*[@id='gbw']/div/div/div[1]/div[1]/a"))
				.click();
		String s = driver.getTitle();

		if (s.equals("Gmail")) {
			System.out.println("Gmail ACC");
		} else {
			System.out.println("Invalid");
		}
	}}
```

Output


Gmail
https://accounts.google.com/signin/v2/identifier?service=mail&passive=true&rm=false&continue=https%3A%2F%2Fmail.google.com%2
Search
Google
Sign in
to continue to Gmail
Email or phone
Forgot email?
More options
NEXT
English (United States)
Help
Privacy
Terms
EN
1:44 PM
7/2/2017

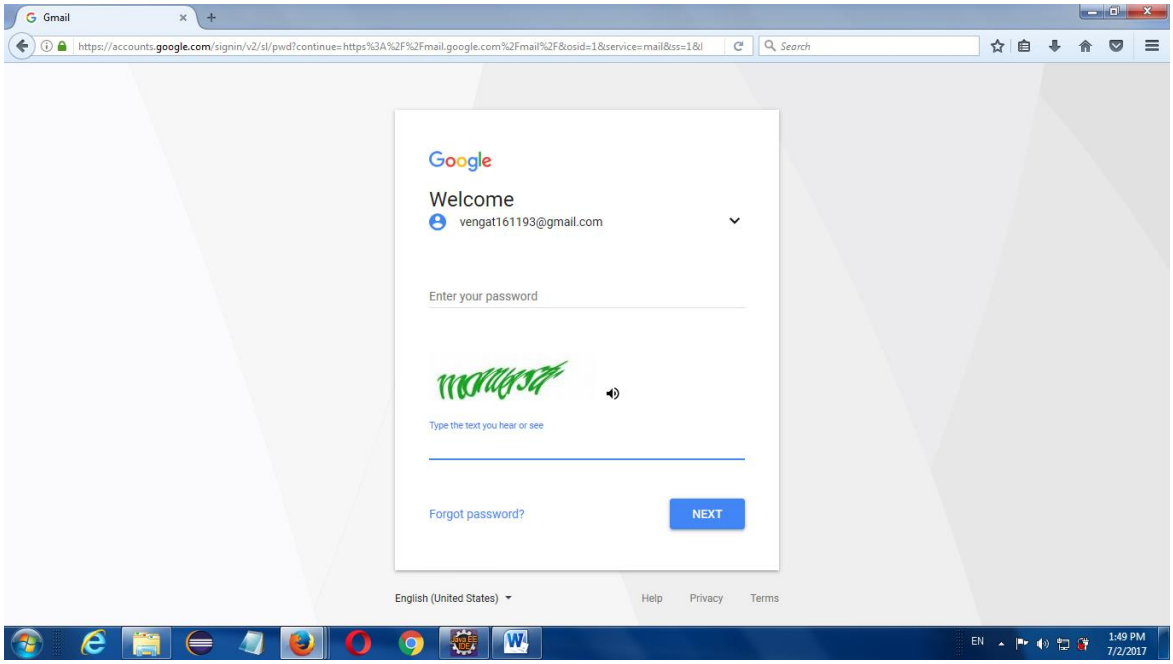

Debug - Selenium/src/selenium/assign1/Ex8.java - Eclipse
File Edit Source Refactor Navigate Search Project Run Window Help
Quick Access
Java EE
Java
Debug
Package Explorer
Array
Assignment
Collection
Dummy
Exception
firstproject
kkkkk
Selenium
src
selenium.assign1
Dummy.java
Ex1.java
Ex10.java
Ex2.java
Ex3.java
Ex4.java
Ex5.java
Ex6.java
Ex7.java
Ex8.java
Ex9.java
selenium.browser
JRE System Library [JavaSE-1.7]
Referenced Libraries
driver
lib
SeleniumTesting
String
Ex2.java
Ex3.java
Ex4.java
Ex5.java
Ex6.java
Ex7.java
Ex8.java
Ex9.java
Ex10.java
public class Ex8 {
public static void main(String[] args) {
System.setProperty("webdriver.gecko.driver",
"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
WebDriver driver = new FirefoxDriver();
driver.get("https://www.google.co.in/");
driver.findElement(By.xpath("//*[@id='gbw']/div/div/div[1]/div[1]/a"))
.click();
String s = driver.getTitle();
if (s.equals("Gmail")) {
System.out.println("Gmail ACC");
} else {
System.out.println("Invalid");
}
}
Console
<terminated> Ex8 [Java Application] C:\Program Files\Java\jre1.8.0_101\bin\javaw.exe (Jul 2, 2017, 1:42:39 PM)
1498983167946 geckodriver INFO Listening on 127.0.0.1:41421
1498983169351 geckodriver::marionette INFO Starting browser C:\Program Files\Mozilla Firefox\firefox.exe with args ["-marionette"]
1498983182769 Marionette INFO Listening on port 51916
Jul 02, 2017 1:43:06 PM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
Gmail ACC
Writable
Smart Insert
25 : 1
EN
1:44 PM
7/2/2017

Program 9: ***Gmail Account Login***

Program:

```
public class Ex2 {
	public static void main(String[] args) throws InterruptedException {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();

	driver.get("https://accounts.google.com/ServiceLogin/identifier?service=mail&pas
sive=true&rm=false&continue=https%3A%2F%2Fmail.google.com%2Fmail%2F&ss=1&
scc=1&ltmpl=default&ltmplcache=2&emr=1&osid=1&flowName=GlifWebSignIn&flow
Entry=ServiceLogin");
		driver.findElement(By.xpath("//*[@id='identifierId']")).sendKeys(
				"vengat161193");
		driver.findElement(By.xpath("//*[@id='identifierNext']/content/span"))
				.click();
		Thread.sleep(3000);
		driver.findElement(
				By.xpath("//*[@id='password']/div[1]/div/div[1]/input"))
				.sendKeys("123456");
		driver.findElement(By.xpath("//*[@id='passwordNext']/content")).click();
	}}
```

Output

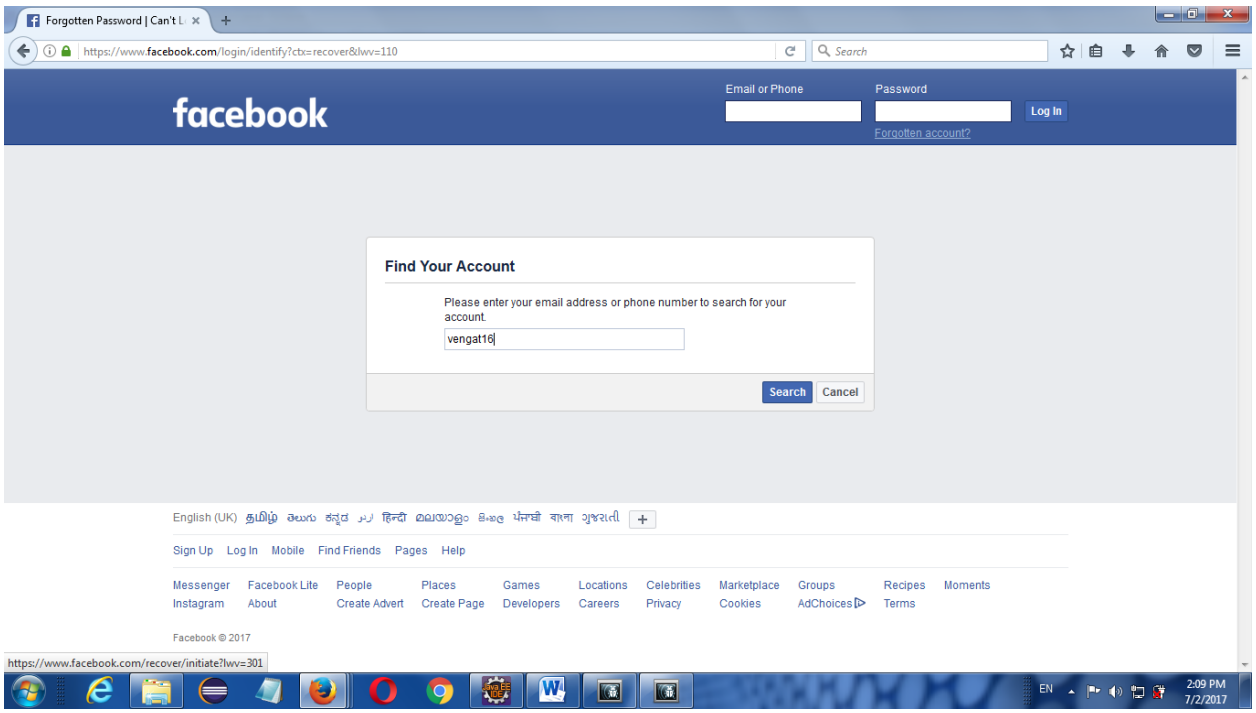


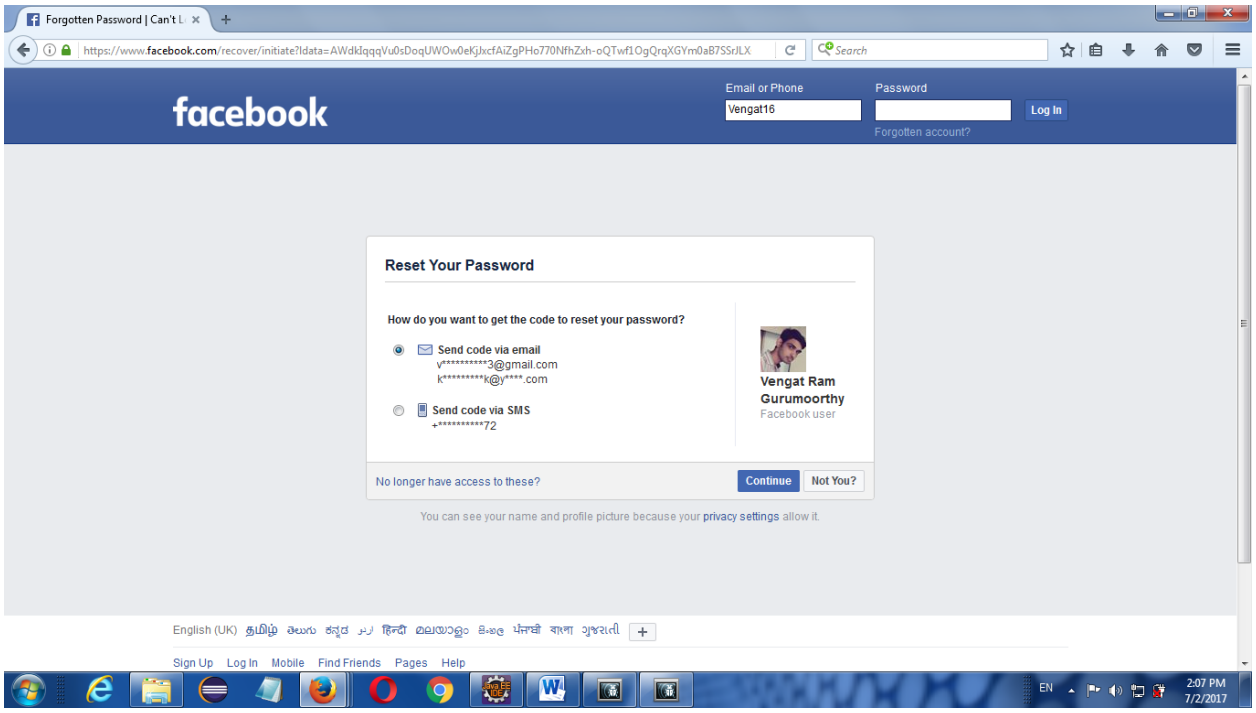
Program 10: ***Go to facebook.com, click forgot password and give email***

Program:

```
public class Ex1 {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");

			WebDriver driver = new FirefoxDriver();
			driver.get("https://www.facebook.com/");
			driver.findElement(
					By.xpath("//*[@id='login_form']/table/tbody/tr[3]/td[2]"))
					.click();

	driver.findElement(By.xpath("//*[@id='identify_email']")).sendKeys("vengat16");
			driver.findElement(By.xpath("//*[@id='u_0_3']")).click();
	}
}
```

Output





KeyBoard Actions using Sendkeys:

```
public class sampl {
    public static void main(String[] args) throws InterruptedException
  {
      //open the browser
      System.setProperty("webdriver.chrome.driver", "C:\\\\Users\\\\10655967\\\\eclipse-workspace\\\\demo\\\\driver\\\\chromedriver.exe");
      WebDriver driver = new ChromeDriver();

          driver.get("https://adactin.com/HotelApp/index.php");

                driver.manage().window().maximize();

                WebElement x = driver.findElement(By.id("username"));

                x.sendKeys("vengatram");

                WebElement x1 = driver.findElement(By.name("password"));

                x.sendKeys(Keys.CONTROL,"ac");
                x1.sendKeys(Keys.CONTROL,"v");
}}
```

getLocation() and getSize():

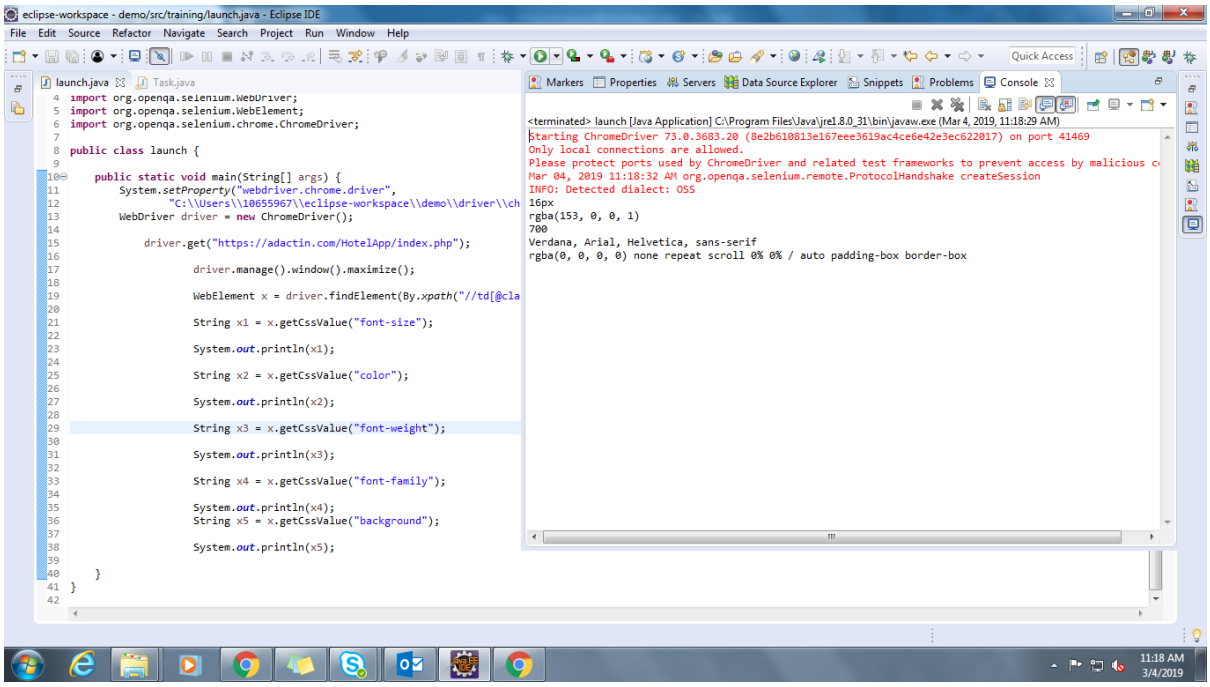
Example:

```
public class Demo
{



	public static void main(String[] args) throws InterruptedException
	{
System.setProperty("webdriver.chrome.driver", "./drivers/chromedriver.exe");
		WebDriver driver = new ChromeDriver();
		driver.manage().window().maximize();
		driver.get("https://demo.actitime.com/login.do");

		WebElement un = driver.findElement(By.id("username"));

		//To get the size of an element; height & width
		Dimension s = un.getSize();
		int h = s.getHeight();
		int w = s.getWidth();

		System.out.println("Height: "+h);
		System.out.println("Width: "+w);

		//To get location of an element; x-axis & y-axis
		Point l = un.getLocation();
		int x = l.getX();
		int y = l.getY();

		System.out.println("x-axis: "+x);
		System.out.println("y-axis: "+y);

		Thread.sleep(1000);
		driver.close();
	}
}
```

getCssValue():

It is used to get the css property (font, color, size) of a web element.

```
public class Login {

	public static void main(String[] args) throws Throwable {

		System.setProperty("webdriver.chrome.driver",
				"C:\\Users\\10657527\\Downloads\\chromedriver_win32
(1)\\chromedriver.exe");
		WebDriver driver = new ChromeDriver();

		driver.get("https://adactin.com/HotelApp/index.php");

		driver.manage().window().maximize();

		WebElement x =
driver.findElement(By.xpath("//td[@class='build_title']"));

		String x1 = x.getCssValue("font-size");

		System.out.println(x1);

		String x2 = x.getCssValue("color");

		System.out.println(x2);

		String x3 = x.getCssValue("font-weight");

		System.out.println(x3);

		String x4 = x.getCssValue("font-family");

		System.out.println(x4);
		String x5 = x.getCssValue("background");

		System.out.println(x5);

	}
}
```



Handling multiple elements:

- In order to handle multiple elements we use findElements()
- Return type of findElements() is List<WebElement>
- In findElements(),
    - If the specified locator is matching with multiple elements then it returns address of all the matching elements
    - If the specified locator is not matching with any elements then it returns empty list(0).

Note:

- For findElements() the preferred locators are
    - tagName
    - xpath
- List<WebElement> allLinks = driver.findElements(By.xpath("//a"));
    - driver.findElements(By.xpath("//a")) will return the object of List interface implementation class. Ie, ArrayList.

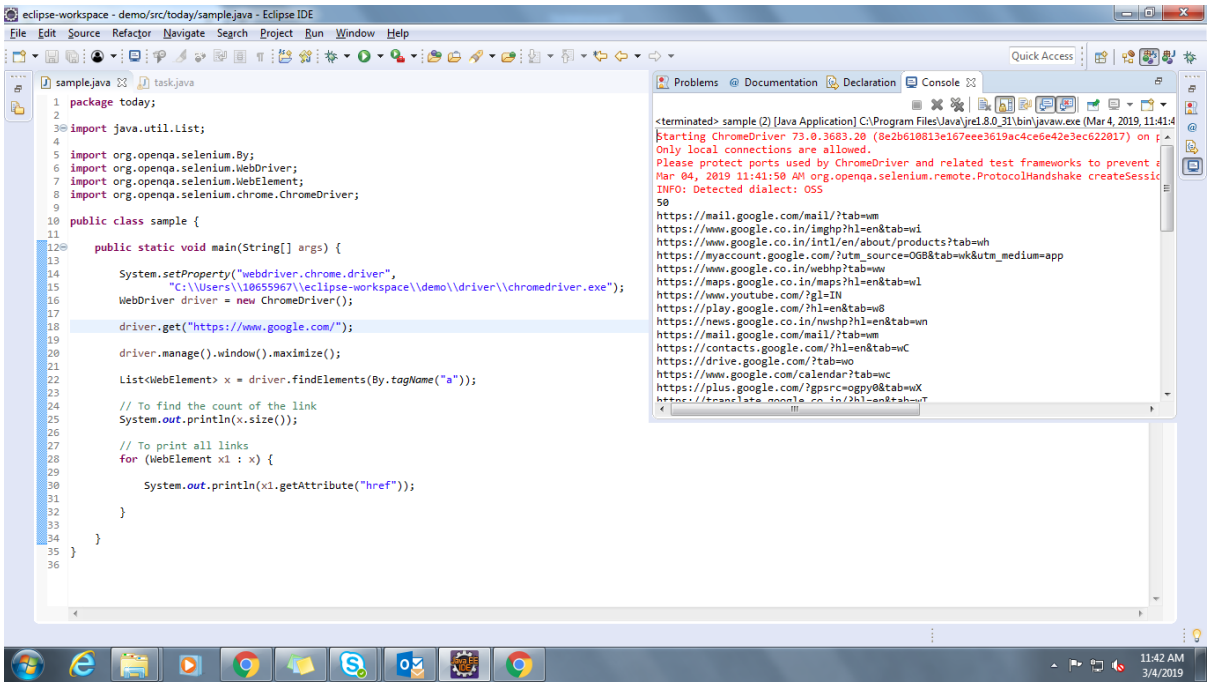
Sample web page:

Qspiders

Jspiders

Ex: To count number of links available in google page

```
public class Login {

	public static void main(String[] args) throws Throwable {

		System.setProperty("webdriver.chrome.driver",
				"C:\\Users\\10657527\\Downloads\\chromedriver_win32
(1)\\chromedriver.exe");
		WebDriver driver = new ChromeDriver();

		driver.get("https://www.google.com/");

		driver.manage().window().maximize();

		List<WebElement> x = driver.findElements(By.tagName("a"));


		// To find the count of the link
		System.out.println(x.size());

		// To print all links
			for (WebElement x1 : x) {

				System.out.println(x1.getAttribute("href"));

			}

	}
}
```




```
package today;

import java.util.List;

import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.chrome.ChromeDriver;

public class sample {

    public static void main(String[] args) {

        System.setProperty("webdriver.chrome.driver",
                "C:\\Users\\10655967\\eclipse-workspace\\demo\\driver\\chromedriver.exe");
        WebDriver driver = new ChromeDriver();

        driver.get("https://www.google.com/");

        driver.manage().window().maximize();

        List<WebElement> x = driver.findElements(By.tagName("a"));

        // To find the count of the link
        System.out.println(x.size());

        // To print all links
        for (WebElement x1 : x) {

            System.out.println(x1.getAttribute("href"));

        }

    }
}
```

CHECK BOX:

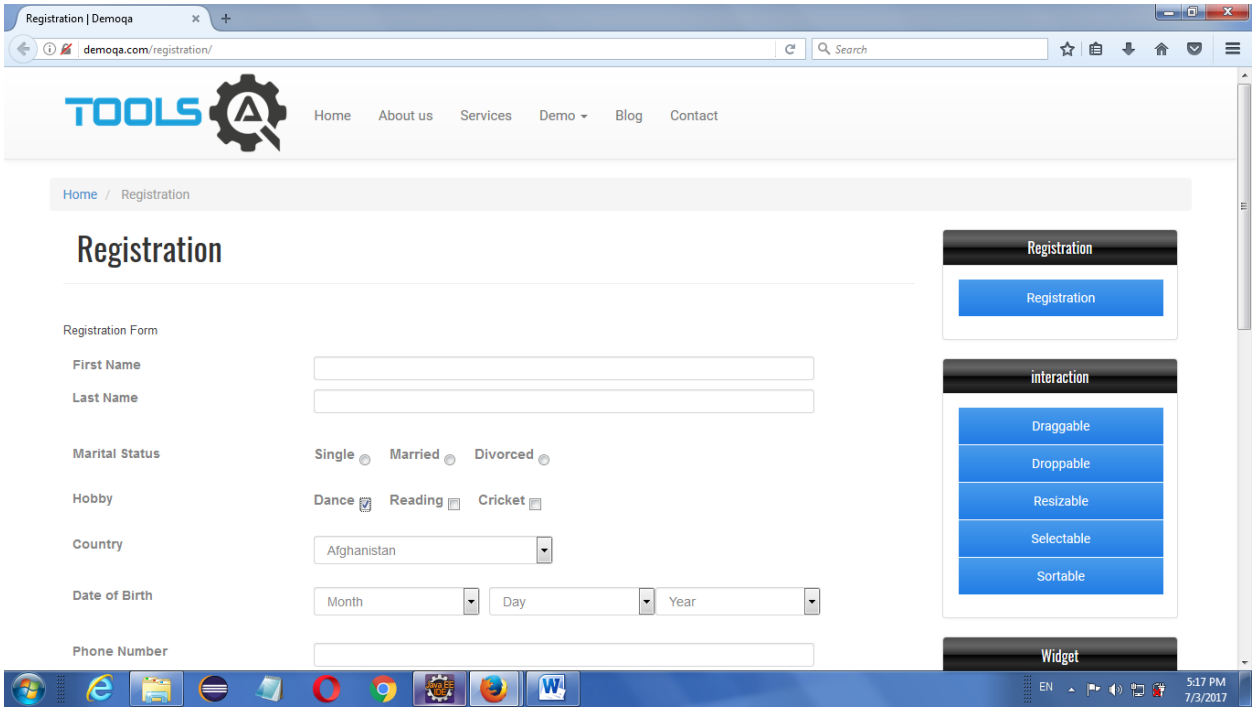
- In check box, we can able to select more than one value at a time.

Select one value:

Eample program:

```
public class Dummy {
        public static void main(String[] args) {

        System.setProperty("webdriver.gecko.driver","C:/Users/siva/workspace/Selenium/
driver/geckodriver.exe");
         WebDriver driver=new FirefoxDriver();
        driver.get("http://demoqa.com/registration/");
        driver.findElement(By.xpath(".//input[@value='dance']")).click();

}
}
```

output:



Select more than one value:

Eample program:

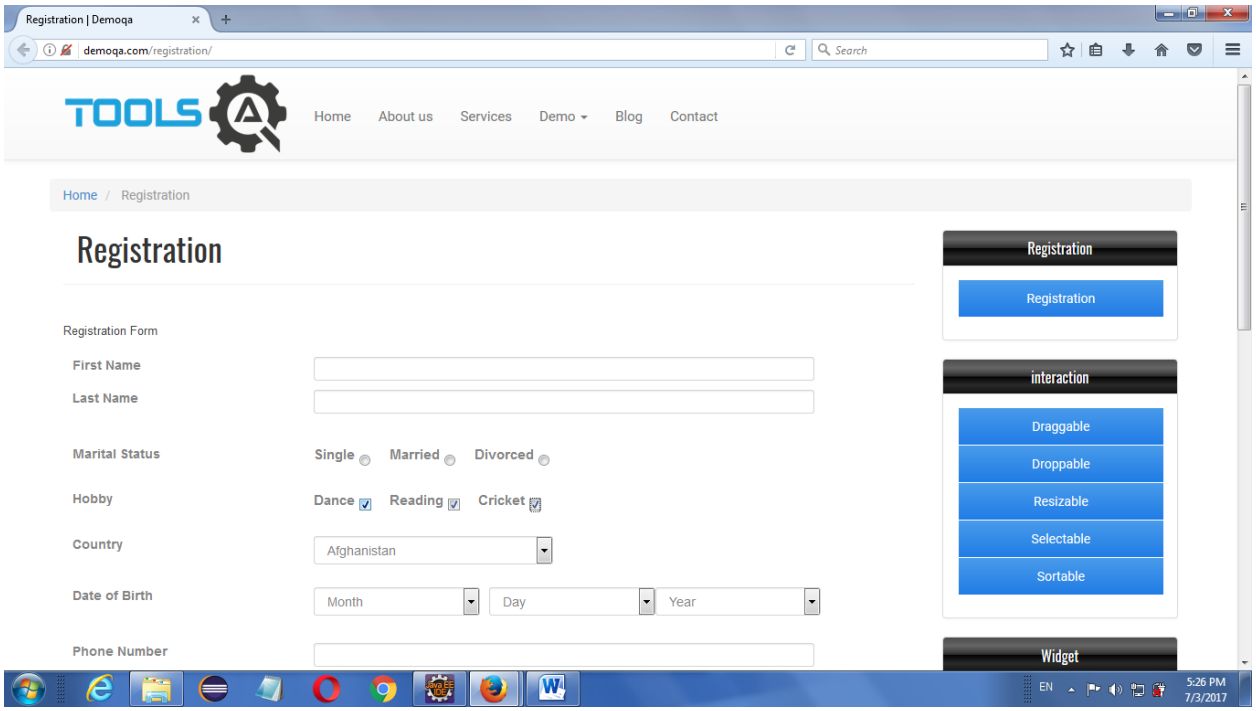
```
public class Dummy {
	public static void main(String[] args) {

	System.setProperty("webdriver.gecko.driver","C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
	 WebDriver driver=new FirefoxDriver();
	driver.get("http://demoqa.com/registration/");
	List<WebElement> w = driver.findElements(By.xpath("//input[@type='checkbox']"));
	for(WebElement x:w){
		x.click();
	}
	}
}
```

Here,

- //input[@type='checkbox'] → if xpath we give like, we get 3 matching nodes, so using for loop we can able to select 3 checkbox at a time
- **findElements→ is a method, used to select more than one value**
- **WebElement→ is a interface**

- **By→ is a class name**

Output:

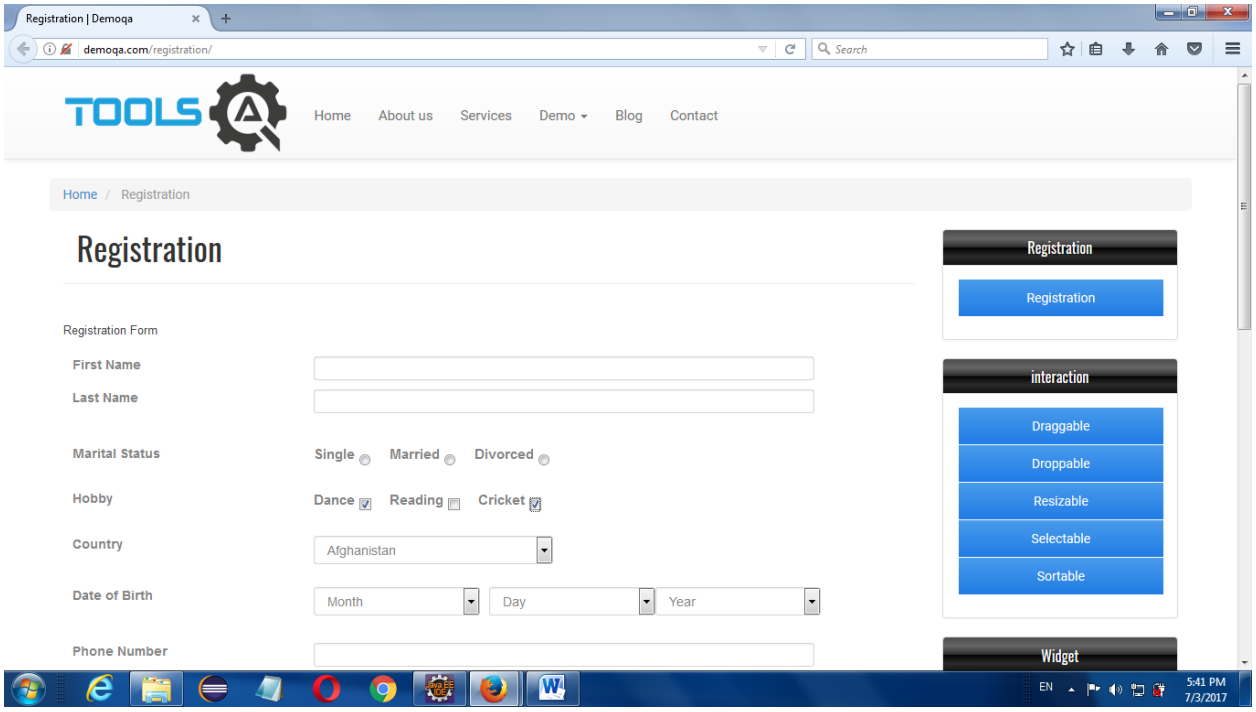


To select two values:

Eample program:

```
public class Dummy {
        public static void main(String[] args) {

        System.setProperty("webdriver.gecko.driver","C:/Users/siva/workspace/Selenium/
driver/geckodriver.exe");
         WebDriver driver=new FirefoxDriver();
        driver.get("http://demoqa.com/registration/");
        List<WebElement> w =
driver.findElements(By.xpath("//input[@type='checkbox']"));
        for(WebElement x:w){
        if(x.getAttribute("value").equals("dance")||x.getAttribute("value").equals("cricket
")){
                        x.click();
        }}
        }
}
```

Output:



Using normal for loop to select all checkbox:

```
public class Dummy {
	public static void main(String[] args) {

	System.setProperty("webdriver.gecko.driver","C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
	 WebDriver driver=new FirefoxDriver();
	driver.get("http://demoqa.com/registration/");
	List<WebElement> w = driver.findElements(By.xpath("//input[@type='checkbox']"));
	for(int i=0;i<w.size();i++){
	w.get(i).click();
	}}
	}
```

Using normal for loop to select two checkbox:

```
public class Dummy {
	public static void main(String[] args) {

	System.setProperty("webdriver.gecko.driver","C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
	 WebDriver driver=new FirefoxDriver();
	driver.get("http://demoqa.com/registration/");
```

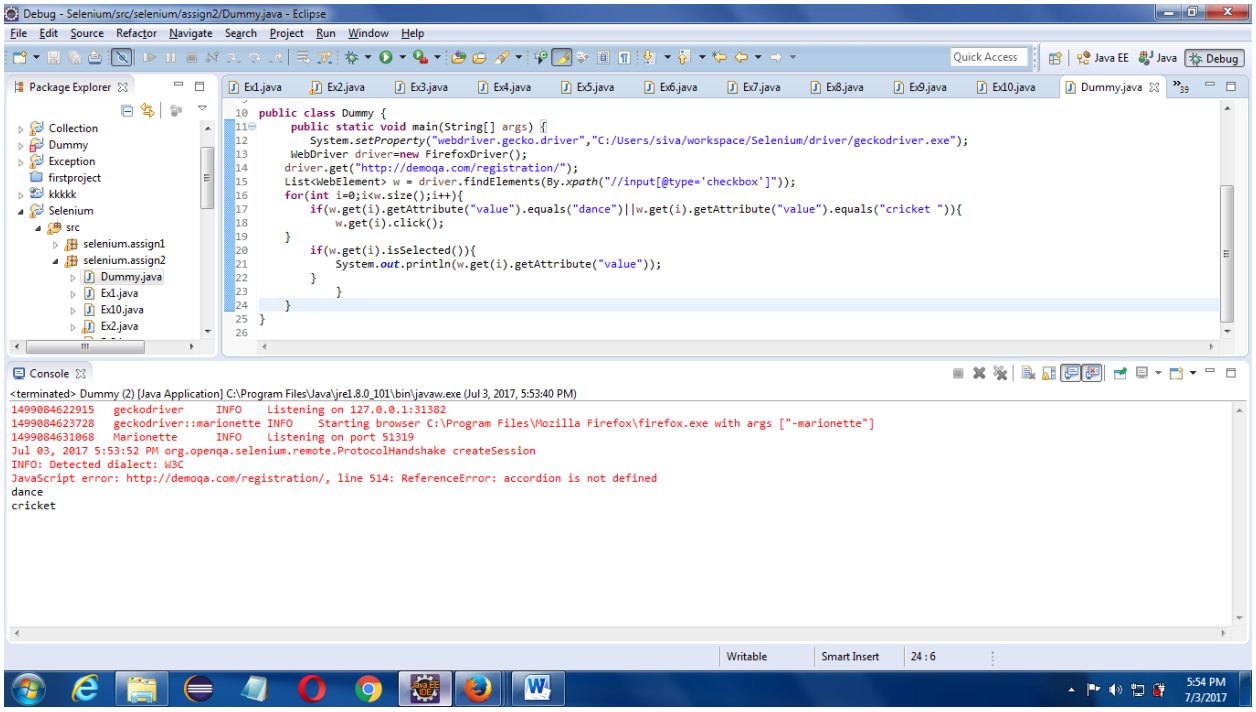
```
        List<WebElement> w =
driver.findElements(By.xpath("//input[@type='checkbox']"));
        for(int i=0;i<w.size();i++){



        if(w.get(i).getAttribute("value").equals("dance")||w.get(i).getAttribute("value").equ
als("cricket ")){
                        w.get(i).click();
        }}
        }
}
```

To print the selected value

Eample program:

```
        public static void main(String[] args) {
                System.setProperty("webdriver.gecko.driver",

        "C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
                WebDriver driver = new FirefoxDriver();
                driver.get("http://demoqa.com/registration/");
                List<WebElement> w = driver.findElements(By
                                .xpath("//input[@type='checkbox']"));
                for (int i = 0; i < w.size(); i++) {
                        if (w.get(i).getAttribute("value").equals("dance")
                                        || w.get(i).getAttribute("value").equals("cricket")) {
                                w.get(i).click();
                        }
                        if (w.get(i).isSelected()) {
                                System.out.println(w.get(i).getAttribute("value"));
                        }
                }
        }
}
```

Output:

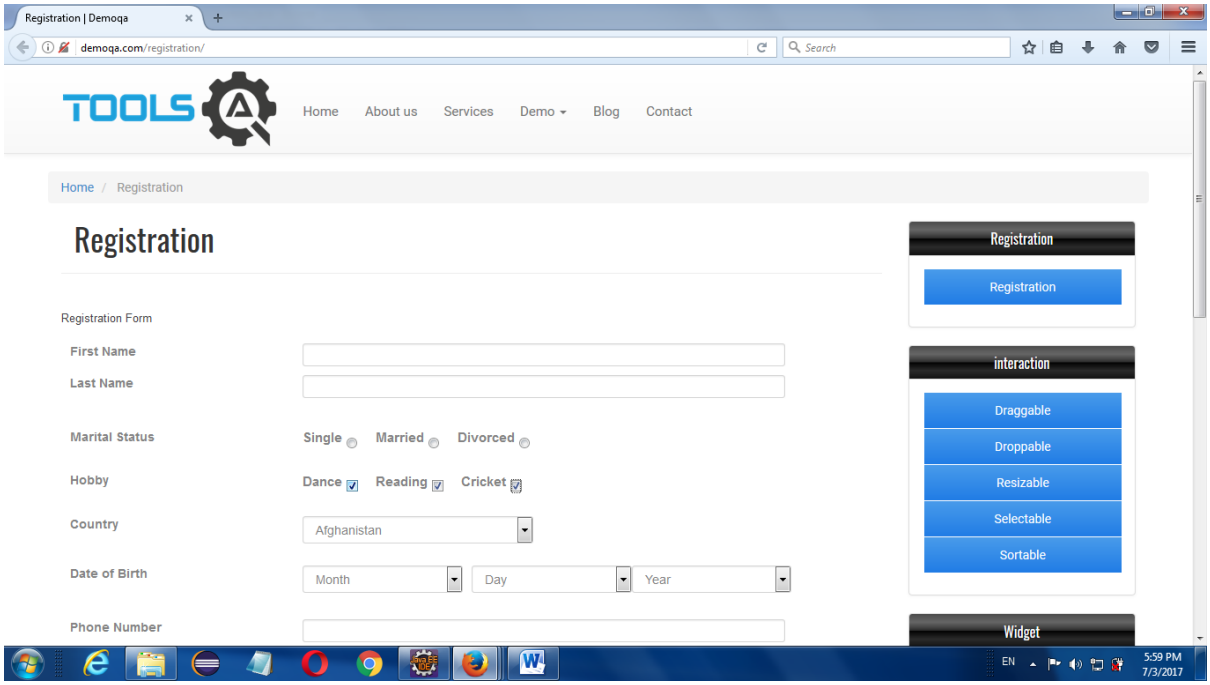


To select the unselected value:

Eample program:

```
public class Dummy {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("http://demoqa.com/registration/");
		List<WebElement> w = driver.findElements(By
				.xpath("//input[@type='checkbox']"));
		for (int i = 0; i < w.size(); i++) {
			if (w.get(i).getAttribute("value").equals("dance")
					|| w.get(i).getAttribute("value").equals("cricket")) {
				w.get(i).click();
			}
			if (!w.get(i).isSelected()) {
				w.get(i).click();
			}
		}
	}
}
```

Output:



Handling auto-suggestions

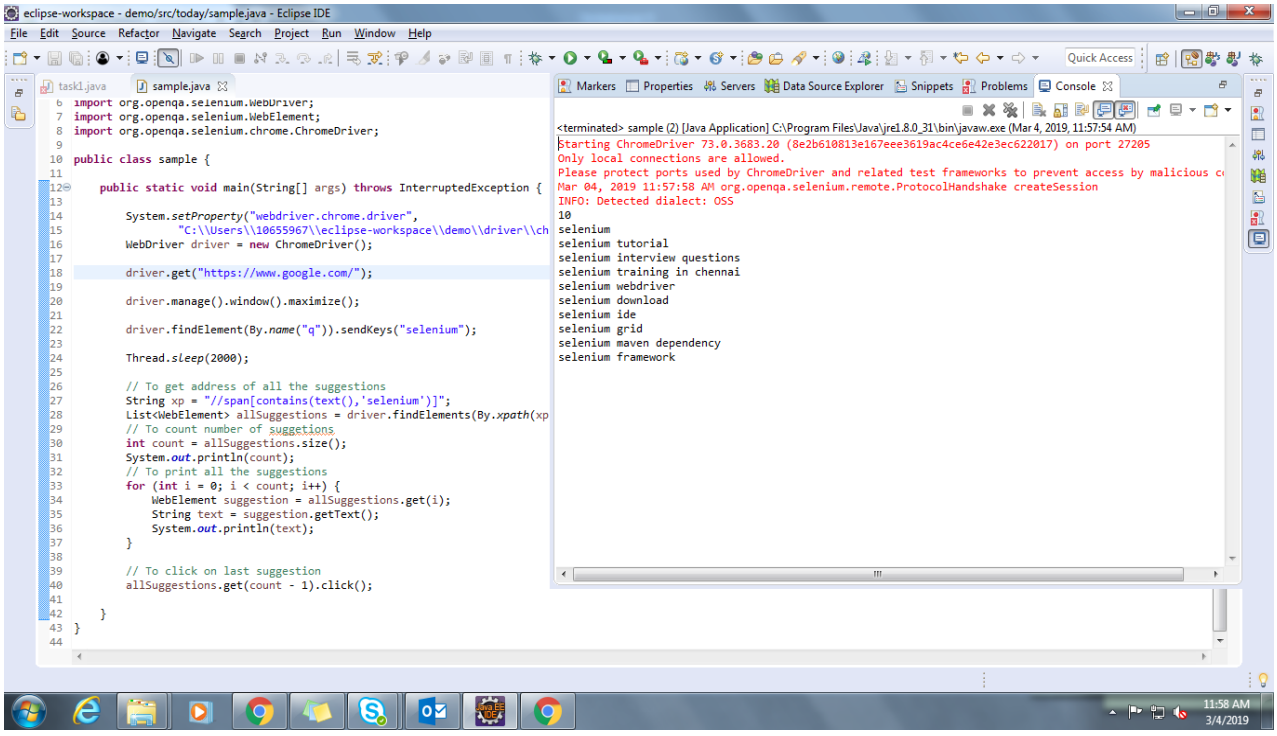
- We can handle auto suggestions by using findElements().

Example:WAS for the following scenario.

- Navigate to google
- Search for qspiders
- Count and print all the auto-suggestions
- Click on last suggestion

```
public class Login {

	public static void main(String[] args) throws Throwable {

		System.setProperty("webdriver.chrome.driver",
				"C:\\Users\\10657527\\Downloads\\chromedriver_win32 (1)\\chromedriver.exe");
		WebDriver driver = new ChromeDriver();

		driver.get("https://www.google.com/");
```

```
		driver.manage().window().maximize();

		driver.findElement(By.name("q")).sendKeys("selenium");

		Thread.sleep(2000);

		// To get address of all the suggestions
		String xp = "//span[contains(text(),'selenium')]";
		List<WebElement> allSuggestions = driver.findElements(By.xpath(xp));
		// To count number of suggetions
		int count = allSuggestions.size();
		System.out.println(count);

		// To print all the suggestions
		for (int i = 0; i < count; i++) {
			WebElement suggestion = allSuggestions.get(i);
			String text = suggestion.getText();
			System.out.println(text);
		}

		// To click on last suggestion
		allSuggestions.get(count - 1).click();
	}

}
```


eclipse-workspace - demo/src/today/sample.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Quick Access
task1.java
sample.java
Markers Properties Servers Data Source Explorer Snippets Problems Console
<terminated> sample (2) [Java Application] C:\Program Files\Java\jre1.8.0_31\bin\javaw.exe (Mar 4, 2019, 11:57:54 AM)
Starting ChromeDriver 73.0.3683.20 (8e2b610813e167eee3619ac4ce6e42e3ec622017) on port 27205
Only local connections are allowed.
Please protect ports used by ChromeDriver and related test frameworks to prevent access by malicious c
Mar 04, 2019 11:57:58 AM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: OSS
10
selenium
selenium tutorial
selenium interview questions
selenium training in chennai
selenium webdriver
selenium download
selenium ide
selenium grid
selenium maven dependency
selenium framework
11:58 AM
3/4/2019

Difference between findElement() & findElements():

findElement()	findElements()
To handle single element	To handle multiple elements
Return type is WebElement	Return type is List<WebElement>
if the specified locator is matching multiple elements then it returns address of 1st matching element	if the specified locator is matching multiple elements then it returns address of all the matching element
if the specified locator is not matching then it returns NoSuchElementException	if the specified locator is not matching then it returns empty list(0)

DROP DOWN:

1.Single value

2.Multiple value

- If the list box is developed by using select tag then we can handle it by using Select class.
- Select class should be imported from the package org.openqa.selenium.support.ui
- Select class contains one constructor which takes an argument of type WebElement where in we have to pass address of the list box.
- Select class contains some methods. They are,

1	selectByIndex(int)	Select the options
2	selectByValue(String)	
3	selectByVisibleText(String)	
4	deselectByIndex(int)	Deselect the options
5	deselectByValue(String)	
6	deselectByVisibleText(String)	
7	deselectAll()	
8	getAllSelectedOptions()	To get all the selected options
9	getFirstSelectedOption()	To get first selected options
10	getOptions()	To get all the options
11	isMultiple()	To check whether list box is single or multi select

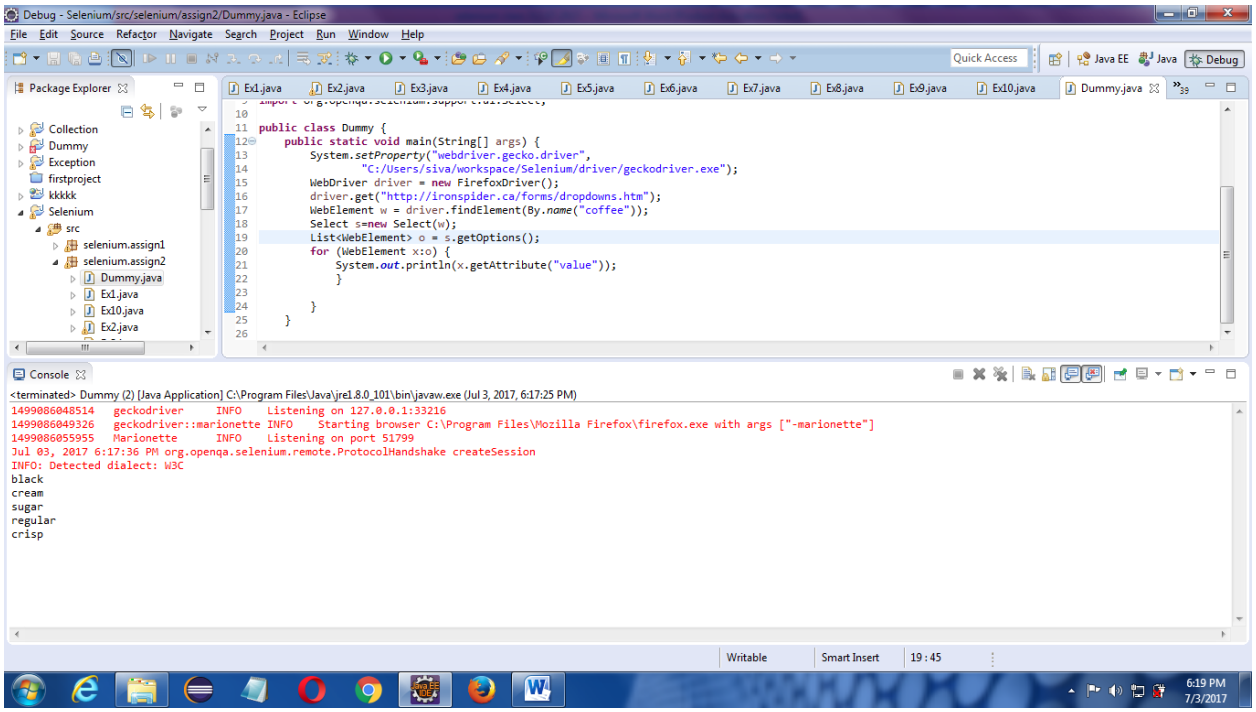
1.SINGLE VALUE

To print all the options:

Eample program:

```
public class Dummy {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("http://ironspider.ca/forms/dropdowns.htm");
		WebElement w = driver.findElement(By.name("coffee"));
		Select s=new Select(w);
		List<WebElement> o = s.getOptions();
		for (WebElement x:o) {
			System.out.println(x.getAttribute("value"));
			}

		}
	}
```

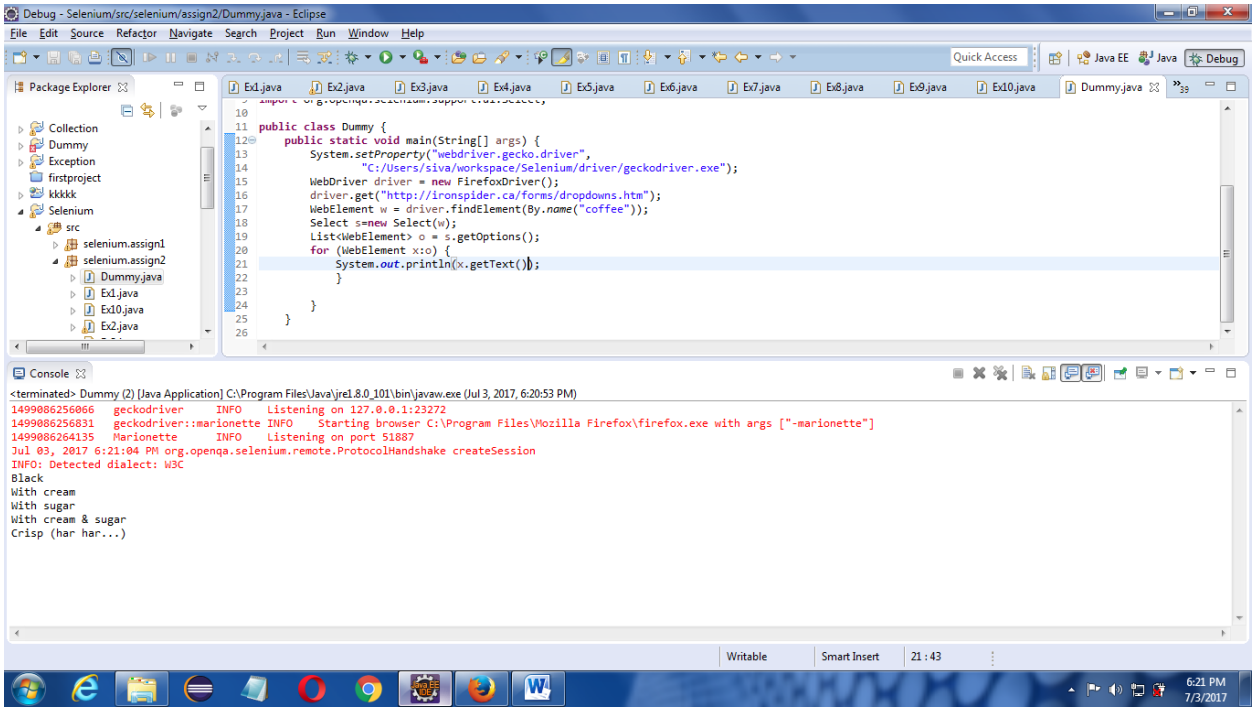
Output:



To print all text

```
public class Dummy {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("http://ironspider.ca/forms/dropdowns.htm");
		WebElement w = driver.findElement(By.name("coffee"));
		Select s=new Select(w);
		List<WebElement> o = s.getOptions();
		for (WebElement x:o) {
			System.out.println(x.getText());
			}

		}
	}
```

Output :



Using normal for loop:

```
public class Dummy {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("http://ironspider.ca/forms/dropdowns.htm");
		WebElement w = driver.findElement(By.name("coffee"));
		Select s=new Select(w);
		List<WebElement> o = s.getOptions();
		for (int i=0;i<=o.size();i++) {
			System.out.println(o.get(i).getAttribute("value"));
			}
			}
	}
```

Here,

- **getAttribute()→ to print particular tag(value) value**
- **getText()→ to print all text**

SELECT:

We can perform select by 3 ways

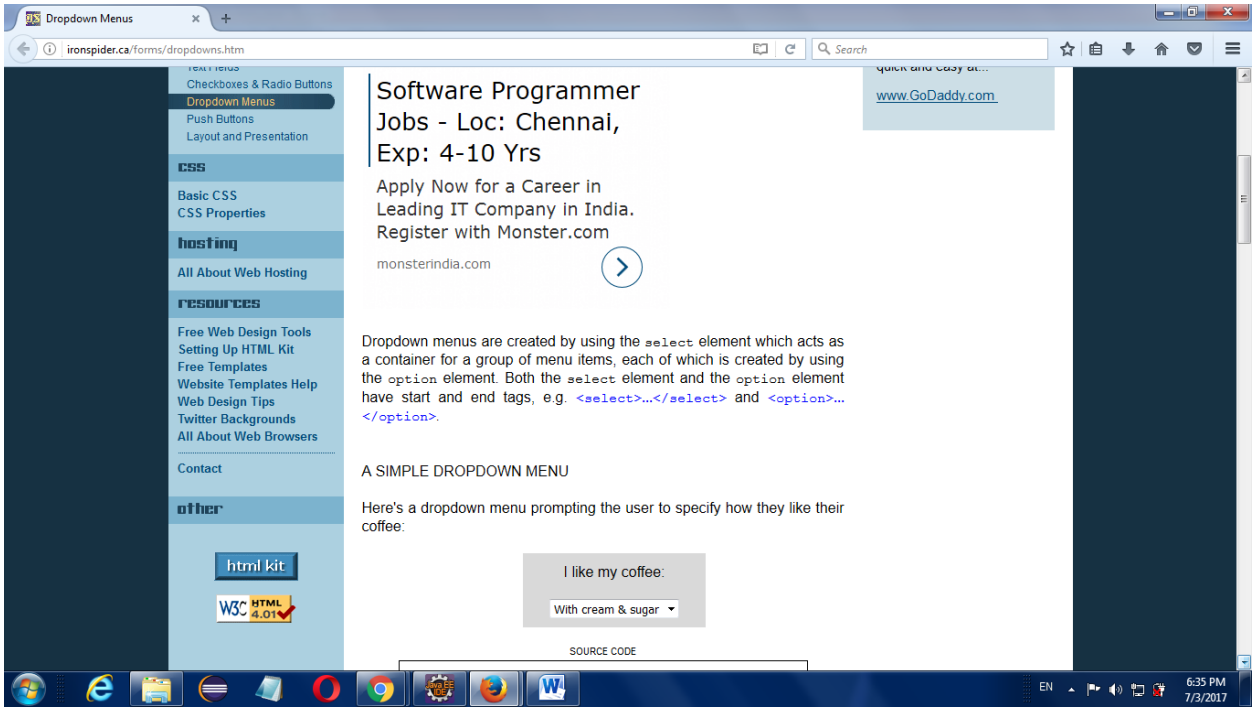
1. **SelectByIndex**
2. **SelectByValue**
3. **SelectByVisibletext**

1.selectByIndex:

Eample program:

```
public class Dummy {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("http://ironspider.ca/forms/dropdowns.htm");
		WebElement w = driver.findElement(By.name("coffee"));
		Select s=new Select(w);
		s.selectByIndex(3);
	}
}
```

Output:


Dropdown Menus
ironspider.ca/forms/dropdowns.htm
Checkboxes & Radio Buttons
Dropdown Menus
Push Buttons
Layout and Presentation
CSS
Basic CSS
CSS Properties
hosting
All About Web Hosting
resources
Free Web Design Tools
Setting Up HTML Kit
Free Templates
Website Templates Help
Web Design Tips
Twitter Backgrounds
All About Web Browsers
Contact
other
html kit
Software Programmer Jobs - Loc: Chennai, Exp: 4-10 Yrs
Apply Now for a Career in Leading IT Company in India. Register with Monster.com
monsterindia.com
www.GoDaddy.com
Dropdown menus are created by using the select element which acts as a container for a group of menu items, each of which is created by using the option element. Both the select element and the option element have start and end tags, e.g. <select>...</select> and <option>...</option>.
A SIMPLE DROPDOWN MENU
Here's a dropdown menu prompting the user to specify how they like their coffee:
I like my coffee:
With cream & sugar
SOURCE CODE
6:35 PM
7/3/2017

2.selectByValue:

Eample program:

```
public class Dummy {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("http://ironspider.ca/forms/dropdowns.htm");
		WebElement w = driver.findElement(By.name("coffee"));
		Select s=new Select(w);
		s.selectByValue("regular");
	}
}
```

3.selectByVisibletext:

Eample program:

```
public class Dummy {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("http://ironspider.ca/forms/dropdowns.htm");
		WebElement w = driver.findElement(By.name("coffee"));
		Select s=new Select(w);
		s.selectByVisibleText("With cream & sugar");
	}
}
```

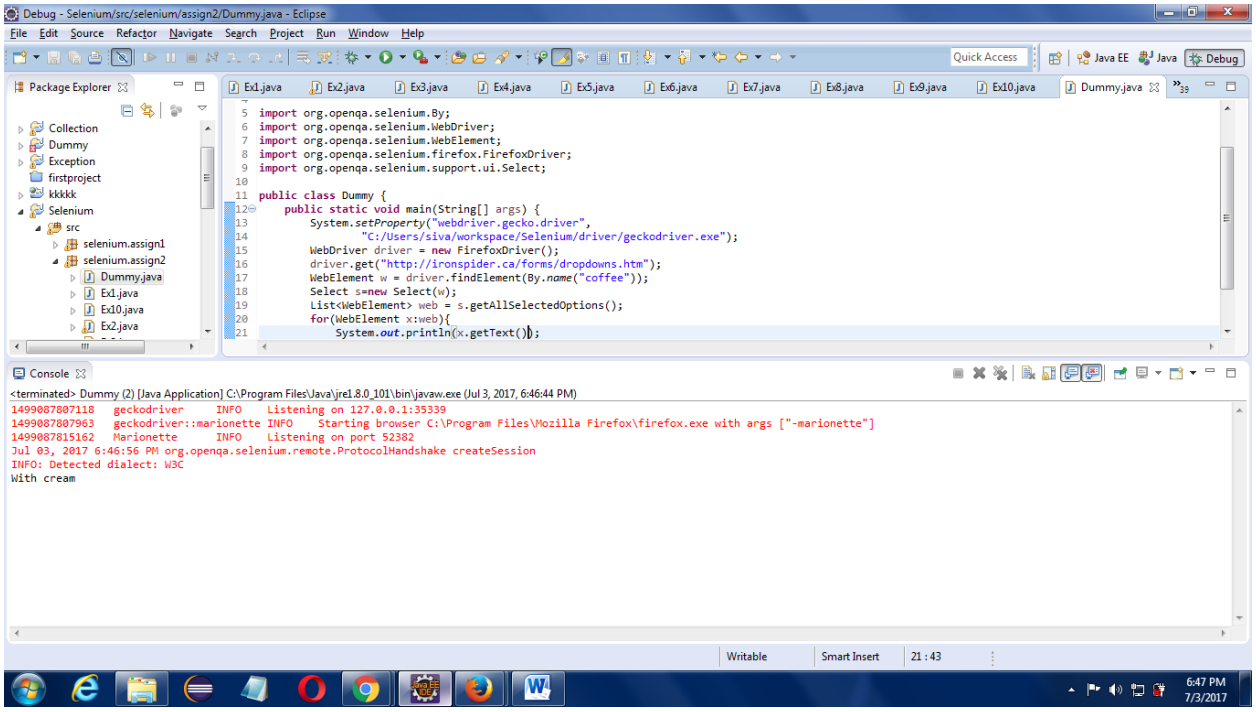
getAllSelectedOptions()

- It is a method, used to print all selected options

Eample program:

```
public class Dummy {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("http://ironspider.ca/forms/dropdowns.htm");
		WebElement w = driver.findElement(By.name("coffee"));
		Select s=new Select(w);
		List<WebElement> web = s.getAllSelectedOptions();
		for(WebElement x:web){
			System.out.println(x.getText());
		}		}}
```

Output:



Note:

- Value and visible text are case sensitive.
- If we pass any invalid arguments then it will throw NoSuchElementException
- If the specified option is duplicate, then it will select 1st matching option.
- We can handle duplicates using index.
- In single select list box, we can not deselect the option. If we try to deselect the option, it will throw UnsupportedOperationException.

2.MULTIPLE VALUE

isMultiple():

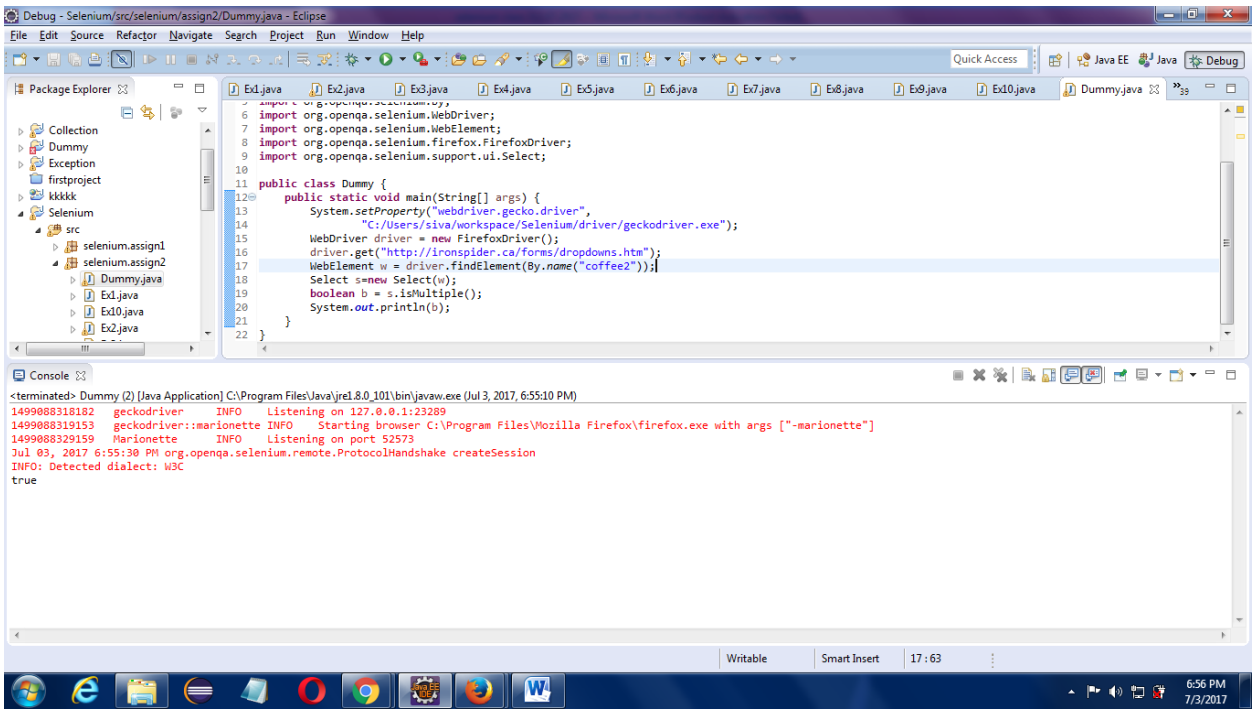
- It is a method, used to check we can able to select multiple values or not

Eample program:

```
public class Dummy {
        public static void main(String[] args) {
                System.setProperty("webdriver.gecko.driver",

        "C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
```

```
                WebDriver driver = new FirefoxDriver();
                driver.get("http://ironspider.ca/forms/dropdowns.htm");
                WebElement w = driver.findElement(By.name("coffee2"));
                Select s=new Select(w);
                boolean b = s.isMultiple();
                System.out.println(b);
        }
}
```

Output:



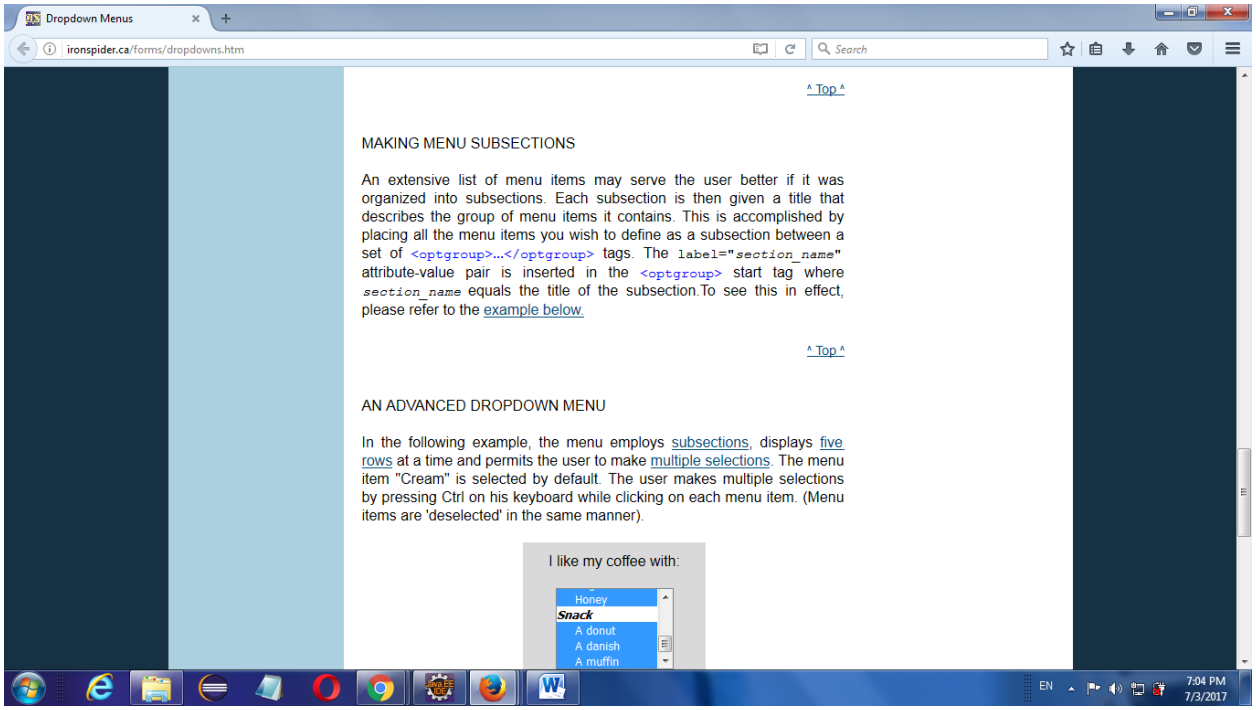
SelectByIndex:

Eample program:

```
public class Dummy {
        public static void main(String[] args) {
                System.setProperty("webdriver.gecko.driver",

        "C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
```

```
                WebDriver driver = new FirefoxDriver();
                driver.get("http://ironspider.ca/forms/dropdowns.htm");
                WebElement w = driver.findElement(By.name("coffee2"));
                Select s=new Select(w);
                List<WebElement> web = s.getOptions();
                for(int i=0;i<web.size();i++){
                        s.selectByIndex(i);
                }
        }
}
```

Output:


Dropdown Menus
ironspider.ca/forms/dropdowns.htm
^ Top ^
MAKING MENU SUBSECTIONS
An extensive list of menu items may serve the user better if it was organized into subsections. Each subsection is then given a title that describes the group of menu items it contains. This is accomplished by placing all the menu items you wish to define as a subsection between a set of <optgroup>...</optgroup> tags. The label="section_name" attribute-value pair is inserted in the <optgroup> start tag where section_name equals the title of the subsection.To see this in effect, please refer to the example below.
^ Top ^
AN ADVANCED DROPDOWN MENU
In the following example, the menu employs subsections, displays five rows at a time and permits the user to make multiple selections. The menu item "Cream" is selected by default. The user makes multiple selections by pressing Ctrl on his keyboard while clicking on each menu item. (Menu items are 'deselected' in the same manner).
I like my coffee with:
Honey
Snack
A donut
A danish
A muffin
7:04 PM
7/3/2017

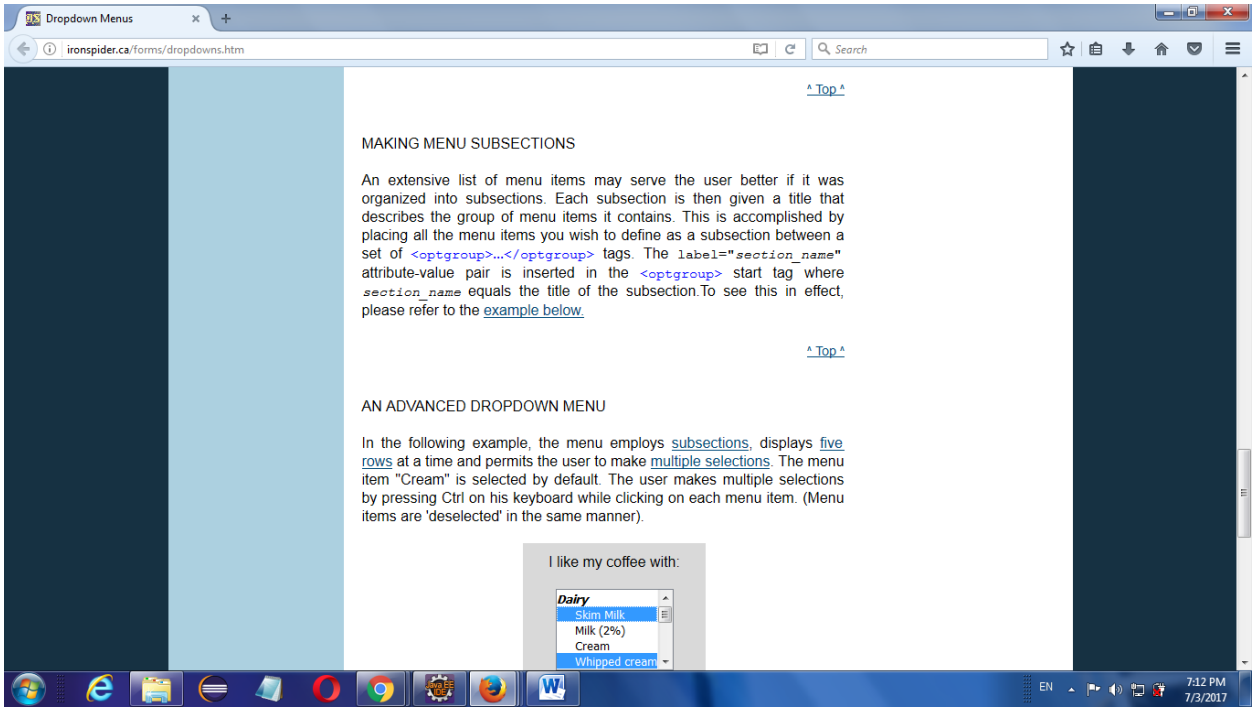
2.selectByValue

Example Program:

```
public class Dummy {
        public static void main(String[] args) {
                System.setProperty("webdriver.gecko.driver",
```

```
        "C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
                WebDriver driver = new FirefoxDriver();
                driver.get("http://ironspider.ca/forms/dropdowns.htm");
                WebElement w = driver.findElement(By.name("coffee2"));
                Select s=new Select(w);
                List<WebElement> web = s.getOptions();
                s.selectByValue("skim");
                s.selectByValue("whipped");
        }
}
```

Output:


Dropdown Menus
ironspider.ca/forms/dropdowns.htm
^ Top ^
MAKING MENU SUBSECTIONS
An extensive list of menu items may serve the user better if it was organized into subsections. Each subsection is then given a title that describes the group of menu items it contains. This is accomplished by placing all the menu items you wish to define as a subsection between a set of <optgroup>...</optgroup> tags. The label="section_name" attribute-value pair is inserted in the <optgroup> start tag where section_name equals the title of the subsection.To see this in effect, please refer to the example below.
^ Top ^
AN ADVANCED DROPDOWN MENU
In the following example, the menu employs subsections, displays five rows at a time and permits the user to make multiple selections. The menu item "Cream" is selected by default. The user makes multiple selections by pressing Ctrl on his keyboard while clicking on each menu item. (Menu items are 'deselected' in the same manner).
I like my coffee with:
Dairy
Skim Milk
Milk (2%)
Cream
Whipped cream
EN
7:12 PM
7/3/2017

Note:

- In multi-select list box, if the specified option is duplicate then it will select all the matching options.
- We can handle duplicates by using index.

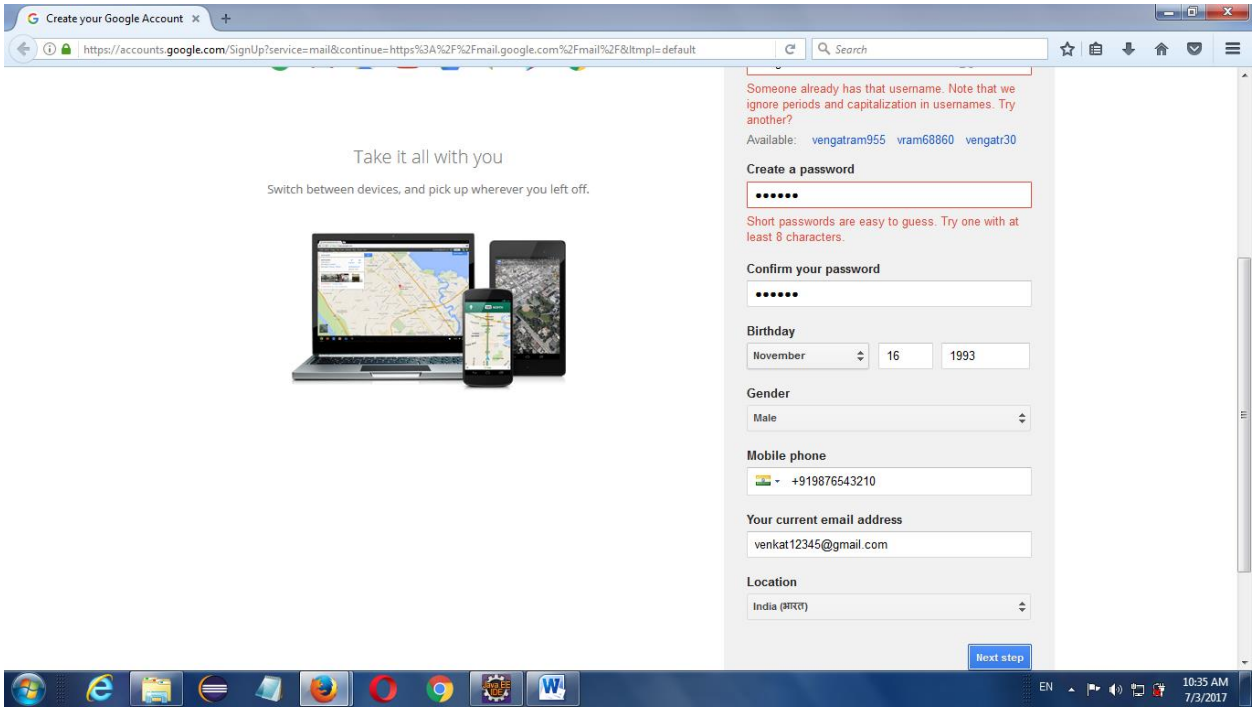
EXERCISE 2:

Program 1: Gmail registration

Program:

```
public class Ex2 {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();

	driver.get("https://accounts.google.com/SignUp?service=mail&continue=https%3
A%2F%2Fmail.google.com%2Fmail%2F&ltmpl=default");
		driver.findElement(By.xpath("//input[@id='FirstName']")).sendKeys(
				"Vengat");

	driver.findElement(By.xpath("//input[@id='LastName']")).sendKeys("Ram");
		driver.findElement(By.xpath("//input[@id='GmailAddress']")).sendKeys(
				"Vengat161193");
		driver.findElement(By.xpath("//input[@id='Passwd']"))
				.sendKeys("123456");
		driver.findElement(By.xpath("//input[@id='PasswdAgain']")).sendKeys(
				"123456");
		driver.findElement(By.xpath(".//*[@id='BirthMonth']/div[1]")).click();
		driver.findElement(By.xpath("//div[contains(text(),'November')]"))
				.click();
		driver.findElement(By.xpath(".//input[@id='BirthDay']")).sendKeys("16");
		driver.findElement(By.xpath(".//input[@id='BirthYear']")).sendKeys(
				"1993");
		driver.findElement(By.xpath(".//*[@id='Gender']/div[1]")).sendKeys(
				"Male");
		driver.findElement(By.xpath("//input[@id='RecoveryPhoneNumber']"))
				.sendKeys("9876543210");
		driver.findElement(By.xpath("//input[@id='RecoveryEmailAddress']"))
				.sendKeys("venkat12345@gmail.com");
		driver.findElement(By.xpath("//*[@id=':i']")).click();
		driver.findElement(By.xpath("//div[contains(text(),'India')]")).click();
		driver.findElement(By.xpath(".//*[@id='submitbutton']")).click();
	}
	}
```

Output:



Program 2: ***Facebook registration***

```
public class Ex1 {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("https://www.facebook.com/");
		driver.findElement(By.xpath("//input[@name='firstname']")).sendKeys(
				"Vengat");
		driver.findElement(By.xpath("//input[@name='lastname']")).sendKeys(
				"Ram");
		driver.findElement(By.xpath("//input[@name='reg_email__']")).sendKeys(
				"9876543210");

	driver.findElement(By.xpath("//input[@name='reg_passwd__']")).sendKeys(
				"123456");
		WebElement w1 = driver.findElement(By.xpath("//*[@id='day']"));
		Select s1 = new Select(w1);
		s1.selectByValue("16");
		WebElement w2 = driver.findElement(By.xpath("//*[@id='month']"));
		Select s2 = new Select(w2);
		s2.selectByValue("11");
```

```
                WebElement w3 = driver.findElement(By.xpath("//*[@id='year']"));
                Select s3 = new Select(w3);
                s3.selectByValue("1993");

                driver.findElement(By.xpath("//label[contains(text(),'Male')]"))
                                .click();
                driver.findElement(By.xpath("//button[@type='submit']")).click();

        }
}
```

Output:

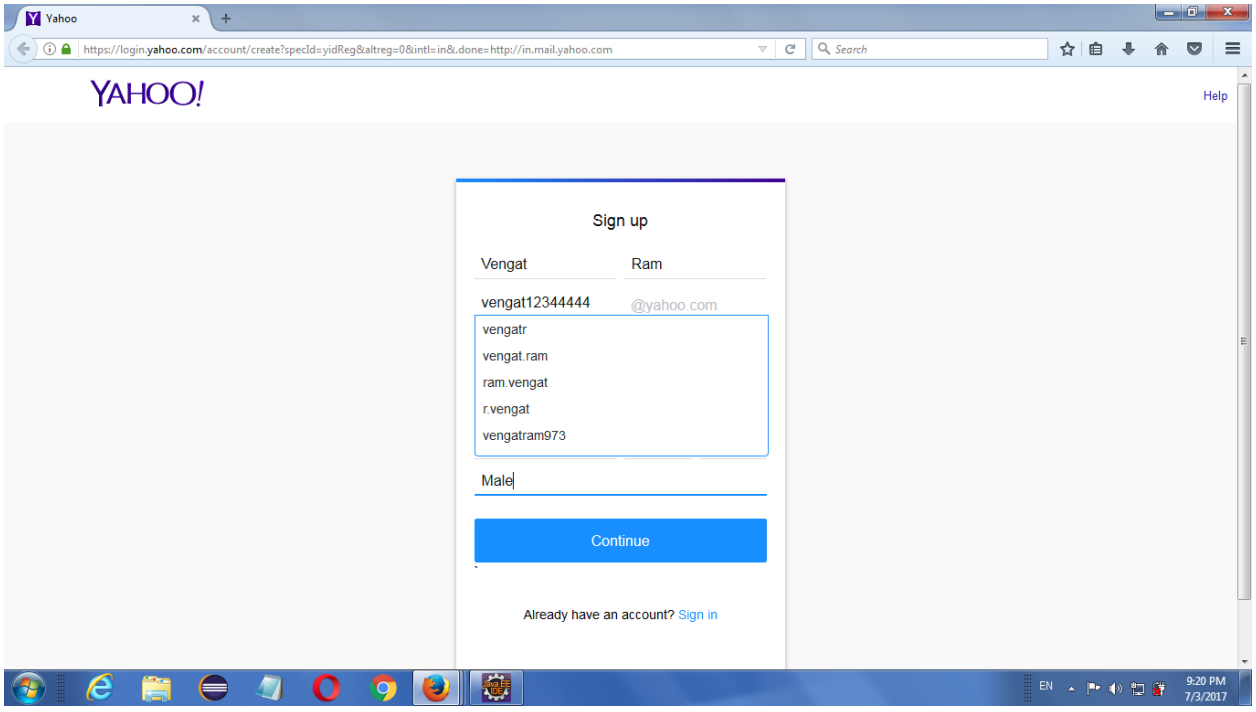
Facebook – log in or sign up
https://www.facebook.com
facebook
Email or Phone
Password
Log In
Forgotten account?
Facebook helps you connect and share with the people in your life.
Create an account
It's free and always will be.
Too many users have this phone number listed as pending.
Vengat
Ram
9876543210
Birthday
16
Nov
1993
Why do I need to provide my date of birth?
Female
Male
By clicking Create an account, you agree to our Terms and confirm that you have read our Data Policy, including our Cookie Use Policy. You may receive SMS message notifications from Facebook and can opt out at any time.
Create an account
EN
10:43 AM
7/3/2017

<u>Program 3:</u>Yahoo registration

```
public class Ex5 {
        public static void main(String[] args) throws InterruptedException {

        System.setProperty("webdriver.gecko.driver","C:/Users/siva/workspace/Selenium/
driver/geckodriver.exe");
                WebDriver driver=new FirefoxDriver();

        driver.get("https://login.yahoo.com/account/create?specId=yidReg&altreg=0&intl
=in&.done=http://in.mail.yahoo.com");
```

```
                driver.findElement(By.xpath("//input[@id='usernamereg-
firstName']")).sendKeys("Vengat");
                driver.findElement(By.xpath("//input[@id='usernamereg-
lastName']")).sendKeys("Ram");
                driver.findElement(By.xpath("//input[@id='usernamereg-
yid']")).sendKeys("vengat12344444");
                driver.findElement(By.xpath("//input[@id='usernamereg-
password']")).sendKeys("venkat12345");
                driver.findElement(By.xpath("//input[@id='usernamereg-
phone']")).sendKeys("98765430001");
                WebElement w =
driver.findElement(By.xpath("//select[@id='usernamereg-month']"));
                Select s=new Select(w);
                s.selectByValue("11");
                driver.findElement(By.xpath("//input[@id='usernamereg-
day']")).sendKeys("16");
                driver.findElement(By.xpath("//input[@id='usernamereg-
year']")).sendKeys("1993");
                driver.findElement(By.xpath("//input[@id='usernamereg-
freeformGender']")).sendKeys("Male");
                Thread.sleep(3000);
                driver.findElement(By.xpath("//button[@id='reg-submit-button']")).click();
        }
}
```

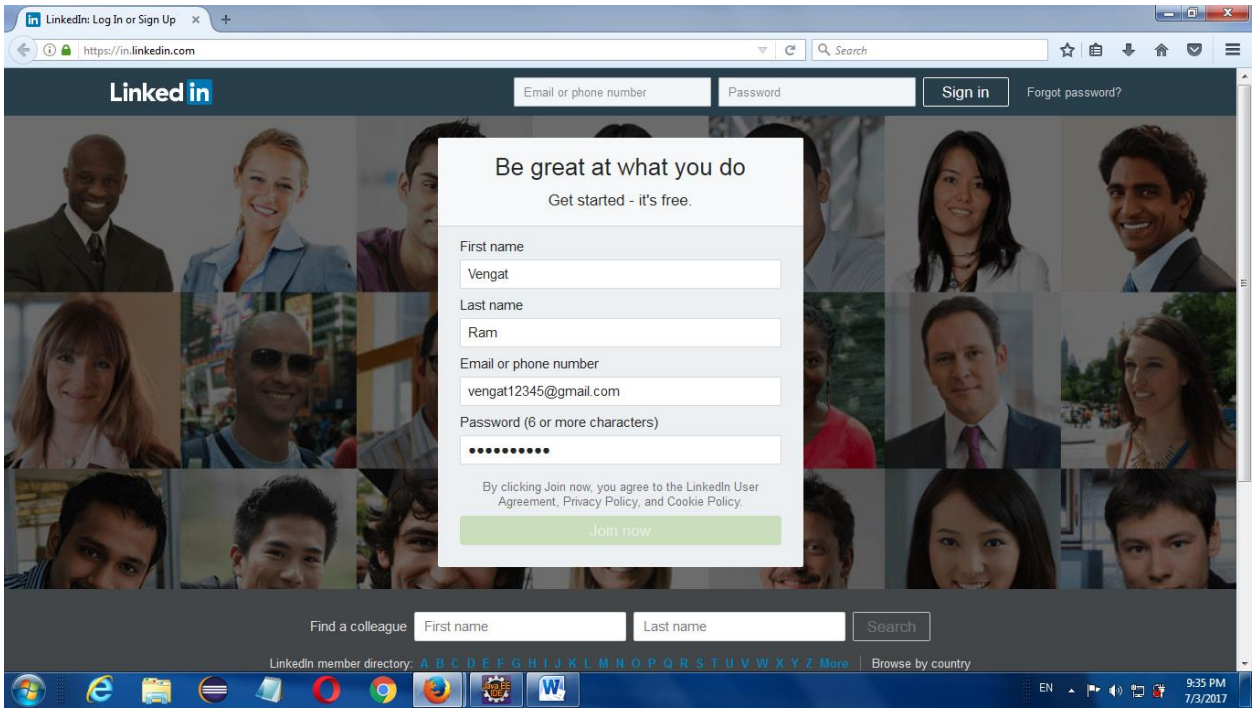
Output:



Program 4: Linkedin login

```
public class Ex6 {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("https://in.linkedin.com/");
		driver.findElement(By.xpath("//input[@id='reg-firstname']")).sendKeys(
				"Vengat");
		driver.findElement(By.xpath("//input[@id='reg-lastname']")).sendKeys(
				"Ram");
		driver.findElement(By.xpath("//input[@id='reg-email']")).sendKeys(
				"vengat12345@gmail.com");
		driver.findElement(By.xpath("//input[@id='reg-password']")).sendKeys(
				"9876543210");
		driver.findElement(By.xpath("//input[@id='registration-submit']")).click();
}}
```

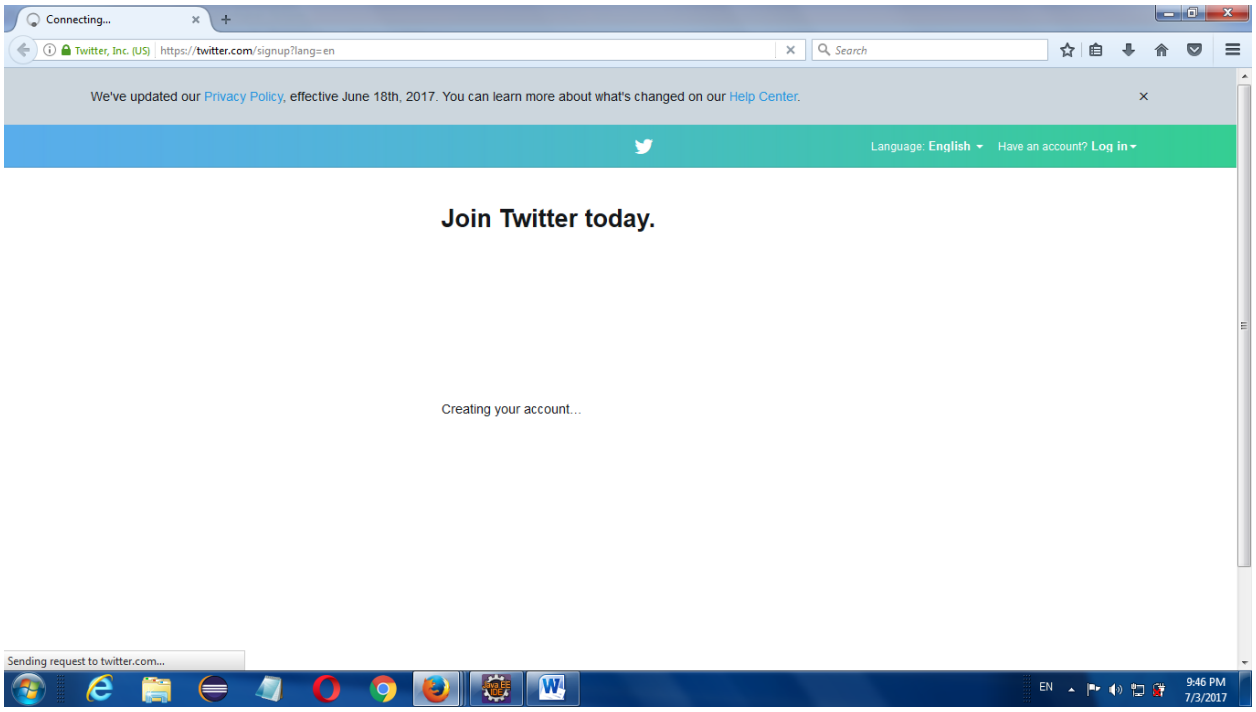
Output:



Program 5: Twitter registration

```
public class Ex4 {
	public static void main(String[] args) throws InterruptedException {

	System.setProperty("webdriver.gecko.driver","C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
				WebDriver driver=new FirefoxDriver();
				driver.get("https://twitter.com/signup?lang=en");
				driver.findElement(By.xpath("//*[@id='full-name']")).sendKeys("vengat");

	driver.findElement(By.xpath("//*[@id='email']")).sendKeys("venkat1234500@gmail.com");
				Thread.sleep(3000);

	driver.findElement(By.xpath("//*[@id='password']")).sendKeys("11111111");
				driver.findElement(By.xpath("//*[@id='submit_button']")).click();
}
}
```

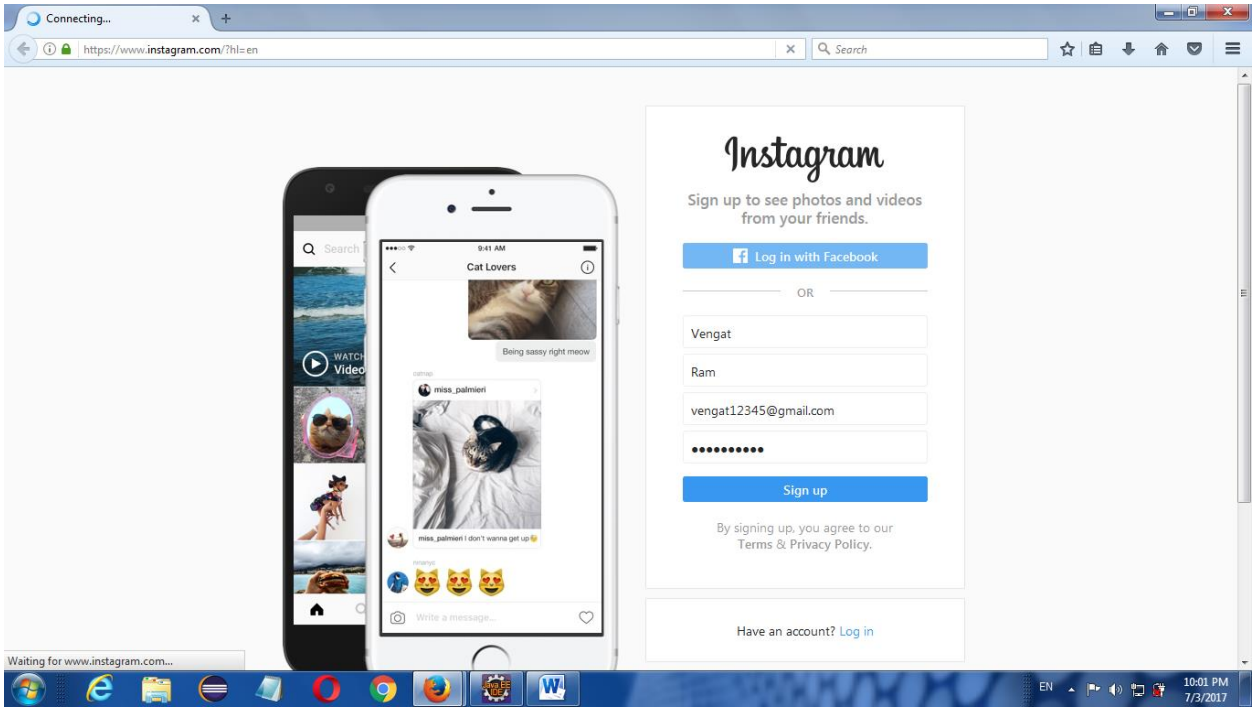
Output:



Program 6: ***Instagram registration***

```
public class Ex7 {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("https://www.instagram.com/?hl=en");

	driver.findElement(By.xpath("//input[@name='emailOrPhone']")).sendKeys(
				"Vengat");
		driver.findElement(By.xpath("//input[@name='fullName']")).sendKeys(
				"Ram");
		driver.findElement(By.xpath("//input[@name='username']")).sendKeys(
				"vengat12345@gmail.com");
		driver.findElement(By.xpath("//input[@name='password']")).sendKeys(
				"9876543210");
		driver.findElement(By.xpath("//*[@id='react-
root']/section/main/article/div[2]/div[1]/div/form/div[6]/span/button")).click();
}
}
```

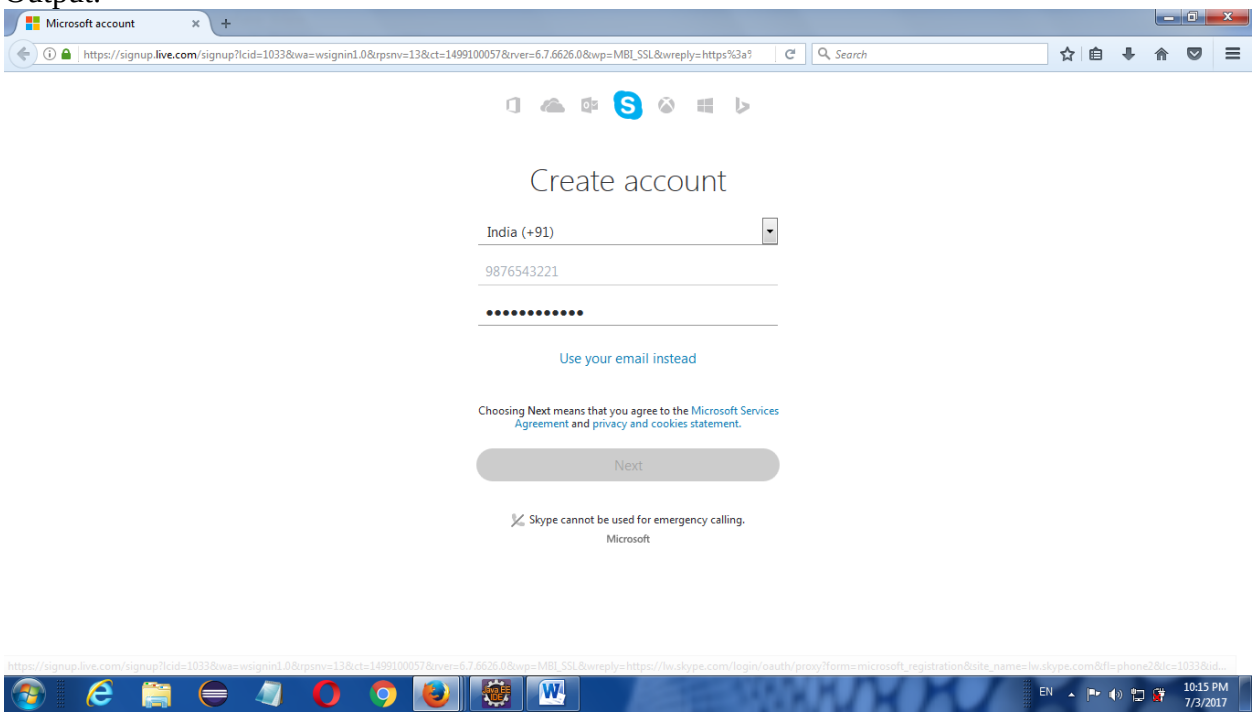
Output:

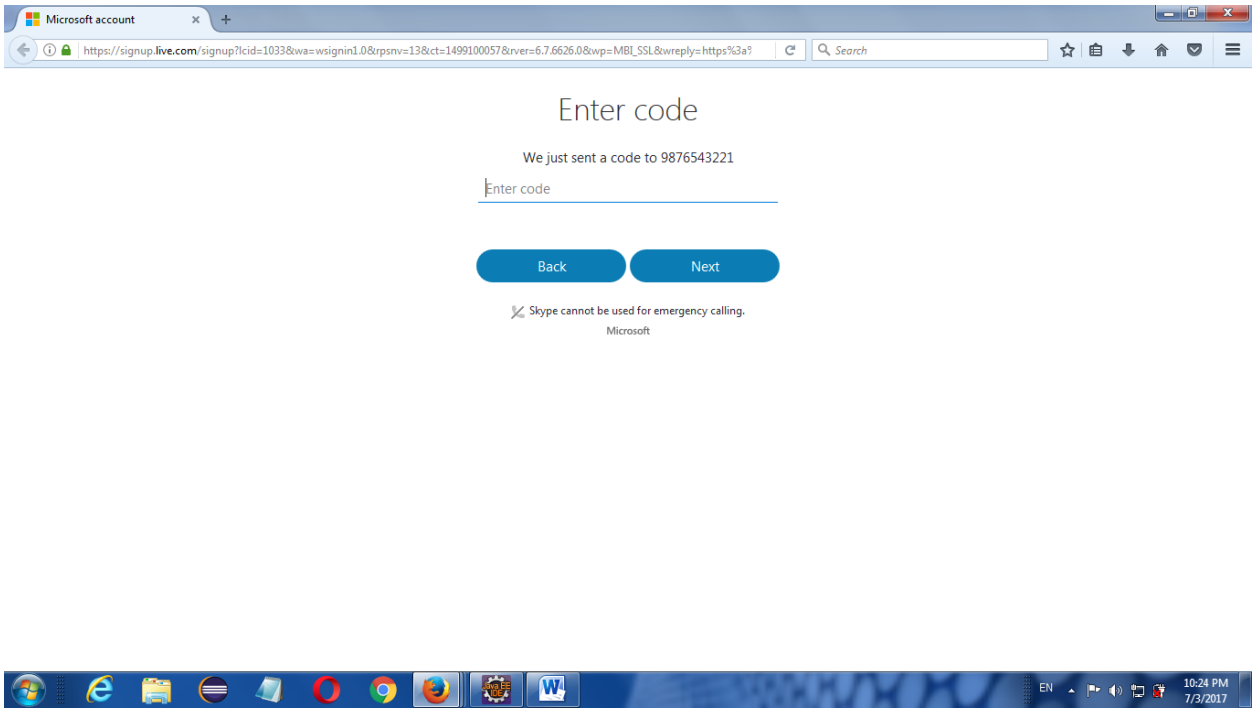


Program 7: ***Skype registration***

```
public class Ex8 {
	public static void main(String[] args) throws InterruptedException {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();

	driver.get("https://signup.live.com/signup?lcid=1033&wa=wsignin1.0&rpsnv=13
&ct=1499100057&rver=6.7.6626.0&wp=MBI_SSL&wreply=https%3a%2f%2flw.skype.c
om%2flogin%2foauth%2fproxy%3fform%3dmicrosoft_registration%26site_name%3dlw.
skype.com%26fl%3dphone2&lc=1033&id=293290&mkt=en-
IN&uaid=41725f7d178ae3acfc20174e1190cd1b&psi=skype&lw=1&cobrandid=90010&cl
ient_flight=hsu%2cReservedFlight33%2cReservedFlight67&fl=phone2&lic=1");
		driver.findElement(By.xpath("//input[@id='MemberName']")).sendKeys(
				"9876543221");
		driver.findElement(By.xpath("//input[@id='Password']")).sendKeys(
				"Venkat122333");
		driver.findElement(By.xpath("//input[@id='iSignupAction']")).click();
		Thread.sleep(3000);
		driver.findElement(By.xpath("//input[@id='FirstName']")).sendKeys(
				"Venkat");
		driver.findElement(By.xpath("//input[@id='LastName']")).sendKeys(
				"Ram");
		driver.findElement(By.xpath("//input[@id='iSignupAction']")).click();
}}
```

Output:



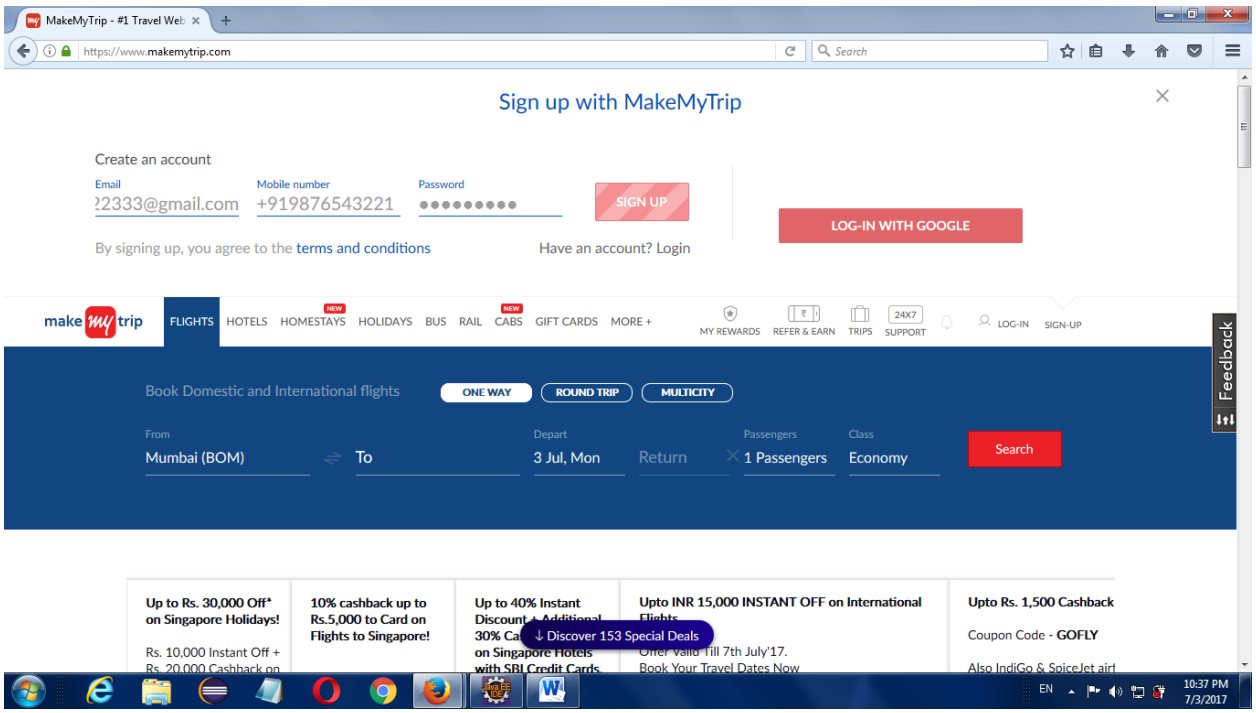


Program 8: Make my trip registration

```
public class Ex9 {

		public static void main(String[] args) throws InterruptedException {
			System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
			WebDriver driver = new FirefoxDriver();
			driver.get("https://www.makemytrip.com/");
			driver.findElement(By.xpath("//a[@id='ch_signup_icon']")).click();

	driver.findElement(By.xpath("//input[@id='ch_signup_email']")).sendKeys(
						"Venkat122333@gmail.com");

	driver.findElement(By.xpath("//input[@id='ch_signup_phone']")).sendKeys("9876
543221");


	driver.findElement(By.xpath("//input[@id='ch_signup_password']")).sendKeys(
						"Venkat123");
```

```
        driver.findElement(By.xpath("//button[@id='ch_signup_btn']")).click();

        //driver.findElement(By.xpath("//input[@id='iSignupAction']")).click();
        }
}
```

Output:



Program 9: Spicinemas registration

```
public class Ex10 {
        public static void main(String[] args) throws InterruptedException {
                System.setProperty("webdriver.gecko.driver",

        "C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
                WebDriver driver = new FirefoxDriver();
                driver.get("https://www.spicinemas.in/user/register");

        driver.findElement(By.xpath("//input[@id='email']")).sendKeys("venkat122333@
gmail.com");
                driver.findElement(By.xpath("//input[@id='password']")).sendKeys(
                                "Venkat54321");
```

```
        driver.findElement(By.xpath("//input[@id='passwordVerify']")).sendKeys("Venka
t54321");

                driver.findElement(By.xpath("//input[@id='name']")).sendKeys(
                                "Venkat");
                driver.findElement(By.xpath("//input[@id='lastName']")).sendKeys(
                                "Ram");
                driver.findElement(By.xpath("//input[@id='dob']")).sendKeys("16-11-
1993");
                driver.findElement(By.xpath("//input[@id='genderMale']")).click();
                driver.findElement(By.xpath("//input[@id='address']")).sendKeys(
                                "No.38, west saidapet");
                driver.findElement(By.xpath("//input[@id='pincode']")).sendKeys(
                                "600015");
                driver.findElement(By.xpath("//input[@id='city']")).sendKeys("chennai");

                driver.findElement(By.xpath("//input[@id='terms-and-
condition']")).click();
                driver.findElement(By.xpath("//button[@id='subscriptionStatus']")).click();
                driver.findElement(By.xpath("//input[@id='register']")).click();
}
```

Deselect:

1. deselect by value
2. deselect by index
3. deselect by visible text
4. deselect all

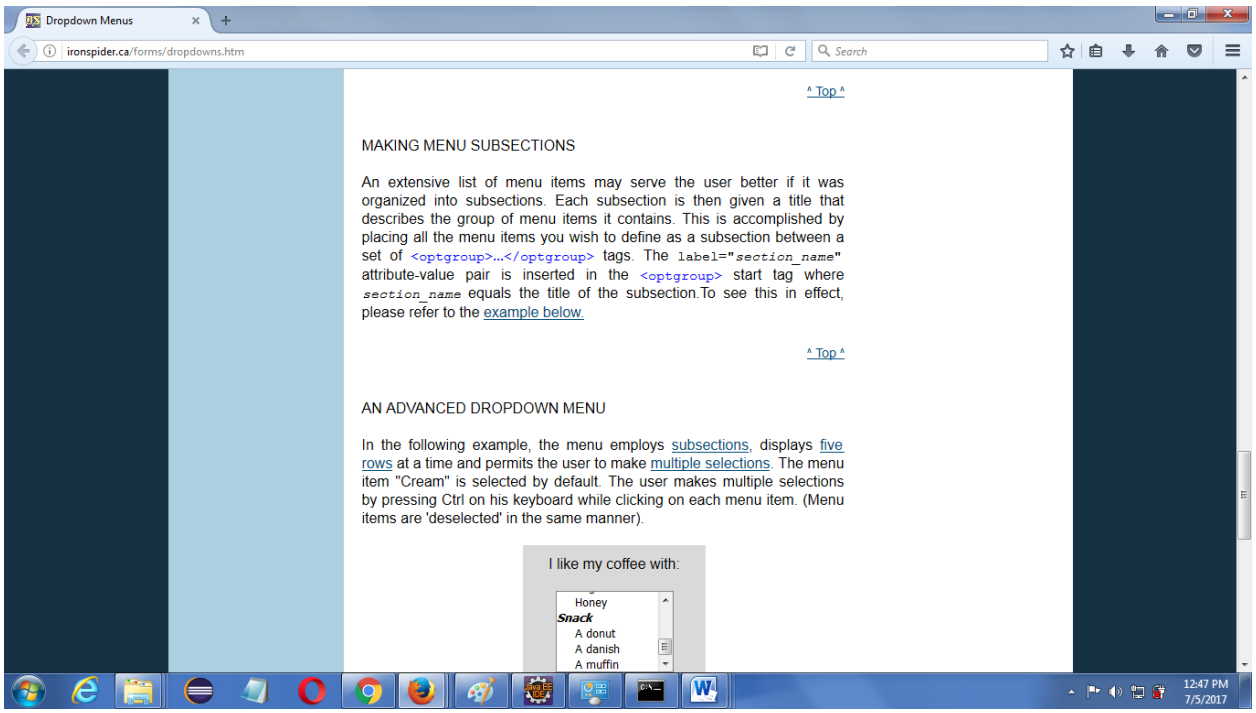
1. deselect by value:

Example program:

```
public class Dummy {
        public static void main(String[] args) throws InterruptedException {
                System.setProperty("webdriver.gecko.driver",

        "C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
                WebDriver driver = new FirefoxDriver();
```

```
                driver.get("http://ironspider.ca/forms/dropdowns.htm");
                WebElement w = driver.findElement(By.name("coffee2"));
                Select s=new Select(w);
                List<WebElement> web = s.getOptions();
                for(int i=0;i<web.size();i++){
                        s.selectByIndex(i);
                        Thread.sleep(3000);
                        s.deselectByIndex(i);
                }
        }
}
```

Output :


Dropdown Menus
ironspider.ca/forms/dropdowns.htm
^ Top ^
MAKING MENU SUBSECTIONS
An extensive list of menu items may serve the user better if it was organized into subsections. Each subsection is then given a title that describes the group of menu items it contains. This is accomplished by placing all the menu items you wish to define as a subsection between a set of <optgroup>...</optgroup> tags. The label="section_name" attribute-value pair is inserted in the <optgroup> start tag where section_name equals the title of the subsection.To see this in effect, please refer to the example below.
^ Top ^
AN ADVANCED DROPDOWN MENU
In the following example, the menu employs subsections, displays five rows at a time and permits the user to make multiple selections. The menu item "Cream" is selected by default. The user makes multiple selections by pressing Ctrl on his keyboard while clicking on each menu item. (Menu items are 'deselected' in the same manner).
I like my coffee with:
Honey
Snack
A donut
A danish
A muffin
12:47 PM
7/5/2017

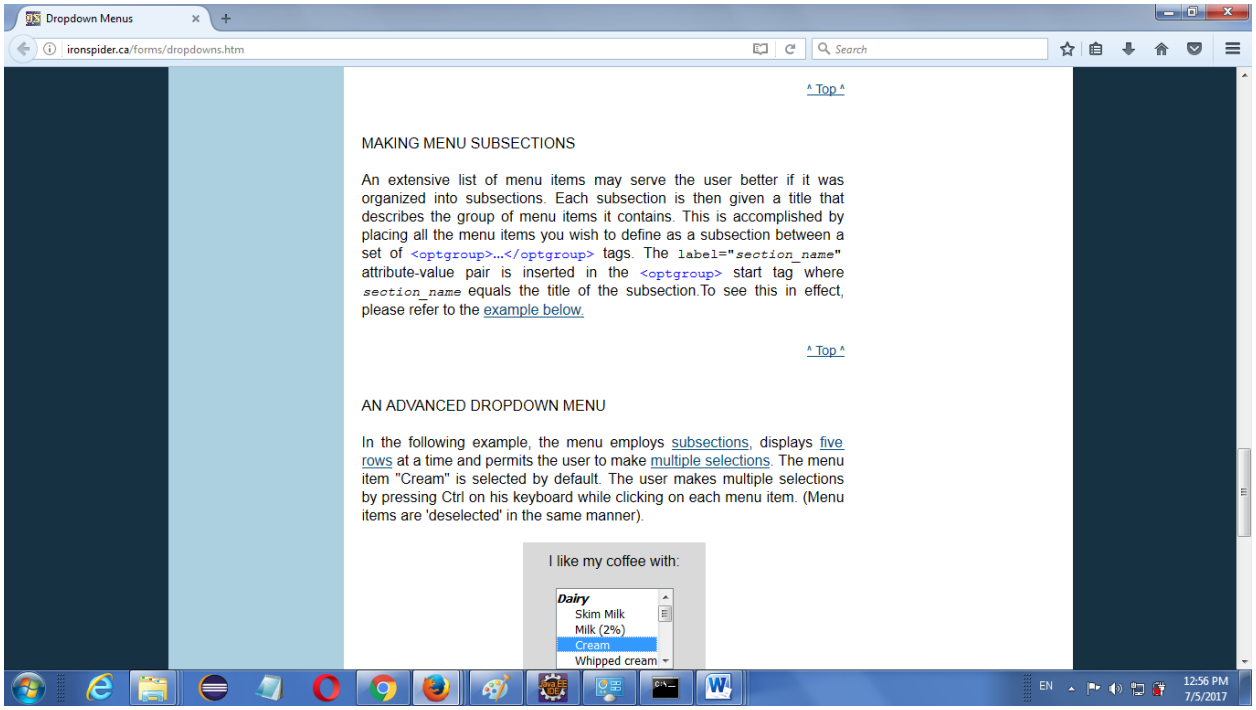
2. Deselect By Value :

Example Program:

```
public class Dummy {
        public static void main(String[] args) {
                System.setProperty("webdriver.gecko.driver",
```

```
"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
        WebDriver driver = new FirefoxDriver();
        driver.get("http://ironspider.ca/forms/dropdowns.htm");
        WebElement w = driver.findElement(By.name("coffee2"));
        Select s=new Select(w);
        List<WebElement> web = s.getOptions();
        s.selectByValue("skim");
        s.selectByValue("whipped");
        try {
            Thread.sleep(3000);
        } catch (InterruptedException e) {
            // TODO Auto-generated catch block
            e.printStackTrace();
        }
        s.deselectByValue("skim");
        s.deselectByValue("whipped");
    }}
```

Output:


Dropdown Menus
ironspider.ca/forms/dropdowns.htm
^ Top ^
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An extensive list of menu items may serve the user better if it was organized into subsections. Each subsection is then given a title that describes the group of menu items it contains. This is accomplished by placing all the menu items you wish to define as a subsection between a set of <optgroup>...</optgroup> tags. The label="section_name" attribute-value pair is inserted in the <optgroup> start tag where section_name equals the title of the subsection.To see this in effect, please refer to the example below.
^ Top ^
AN ADVANCED DROPDOWN MENU
In the following example, the menu employs subsections, displays five rows at a time and permits the user to make multiple selections. The menu item "Cream" is selected by default. The user makes multiple selections by pressing Ctrl on his keyboard while clicking on each menu item. (Menu items are 'deselected' in the same manner).
I like my coffee with:
Dairy
Skim Milk
Milk (2%)
Cream
Whipped cream
12:56 PM
7/5/2017

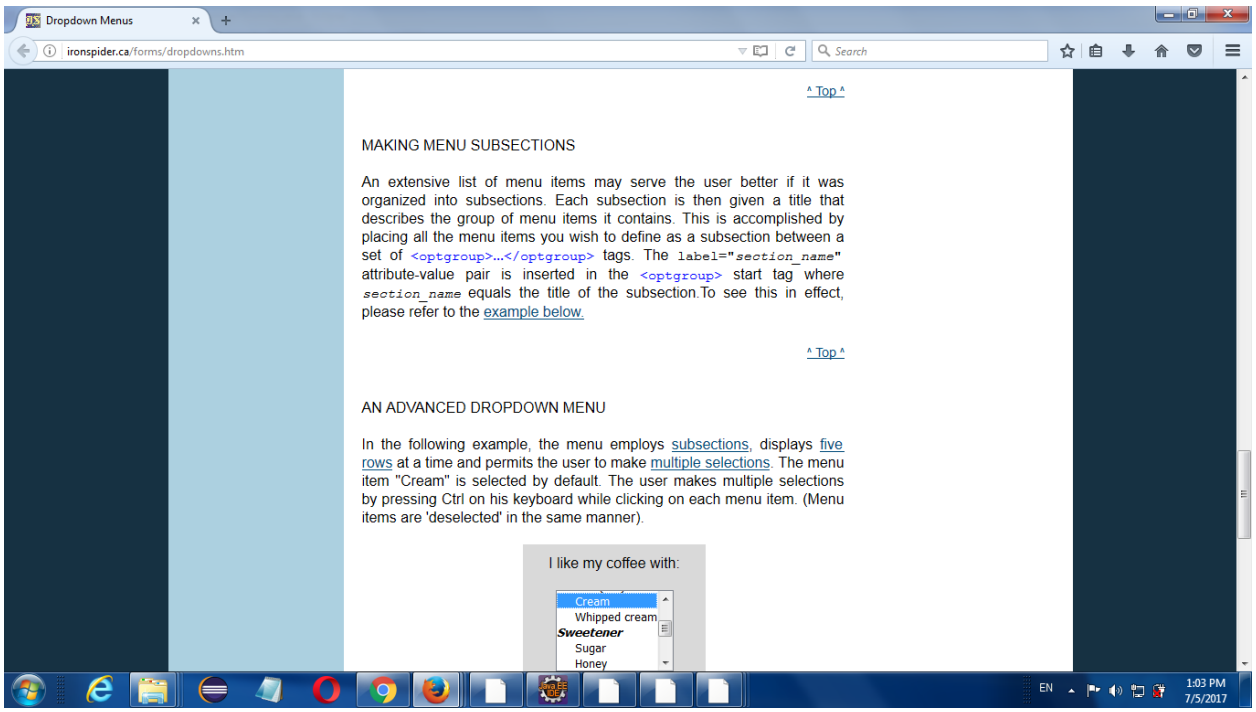
3. Deselect By VisibleText:

Example program:

```
public class Dummy {
    public static void main(String[] args) {
        System.setProperty("webdriver.gecko.driver",
```

```
"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("http://ironspider.ca/forms/dropdowns.htm");
		WebElement w = driver.findElement(By.name("coffee2"));
		Select s=new Select(w);
		List<WebElement> web = s.getOptions();
		s.selectByVisibleText("Sugar");
		s.selectByVisibleText("Honey");
		try {
			Thread.sleep(3000);
		} catch (InterruptedException e) {
			// TODO Auto-generated catch block
			e.printStackTrace();
		}
		s.deselectByVisibleText("Sugar");
		s.deselectByVisibleText("Honey");
	}
}
```

Output :


Dropdown Menus
ironspider.ca/forms/dropdowns.htm
^ Top ^
MAKING MENU SUBSECTIONS
An extensive list of menu items may serve the user better if it was organized into subsections. Each subsection is then given a title that describes the group of menu items it contains. This is accomplished by placing all the menu items you wish to define as a subsection between a set of <optgroup>...</optgroup> tags. The label="section_name" attribute-value pair is inserted in the <optgroup> start tag where section_name equals the title of the subsection.To see this in effect, please refer to the example below.
^ Top ^
AN ADVANCED DROPDOWN MENU
In the following example, the menu employs subsections, displays five rows at a time and permits the user to make multiple selections. The menu item "Cream" is selected by default. The user makes multiple selections by pressing Ctrl on his keyboard while clicking on each menu item. (Menu items are 'deselected' in the same manner).
I like my coffee with:
Cream
Whipped cream
Sweetener
Sugar
Honey
1:03 PM
7/5/2017

WEB TABLE:

tr → Table row

th → Table heading

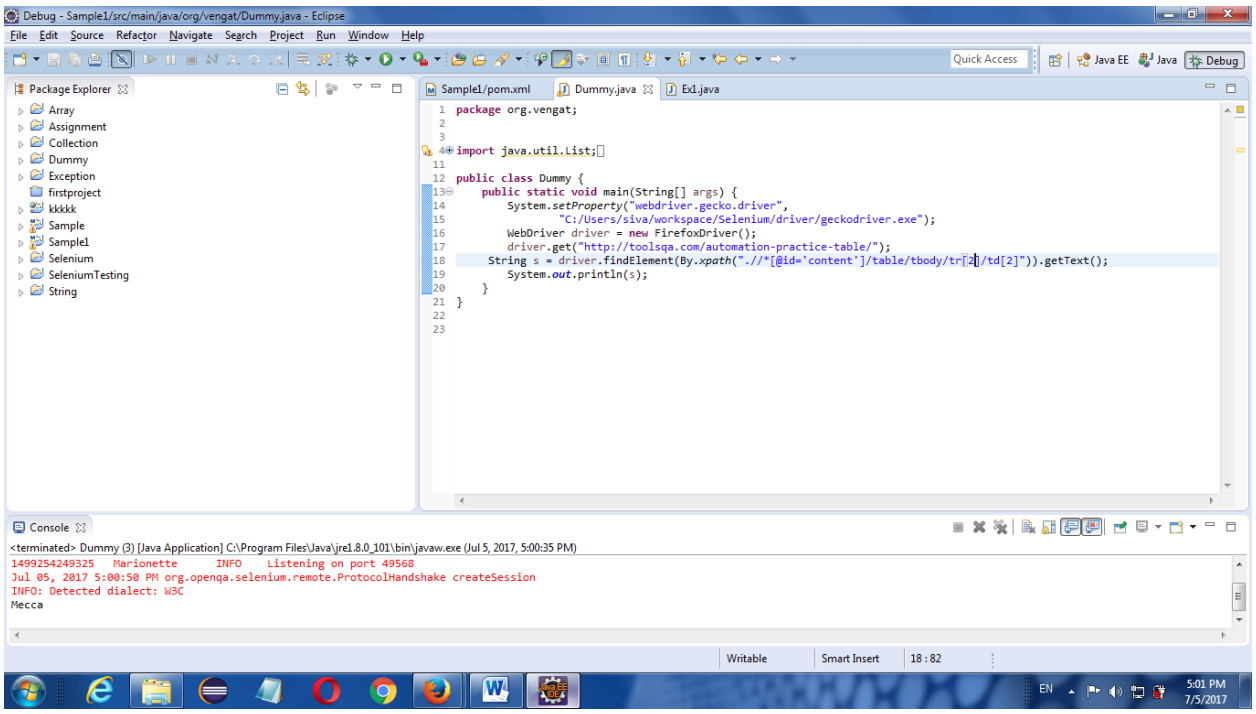
td → Table data

To print particular values(data) in the table:

Example program:

```
public class Dummy {
        public static void main(String[] args) {
                System.setProperty("webdriver.gecko.driver",

        "C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
                WebDriver driver = new FirefoxDriver();
                driver.get("http://toolsqa.com/automation-practice-table/");
         String s =
driver.findElement(By.xpath(".//*[@id='content']/table/tbody/tr[2]/td[2]")).getText();
                System.out.println(s);
        }}
```

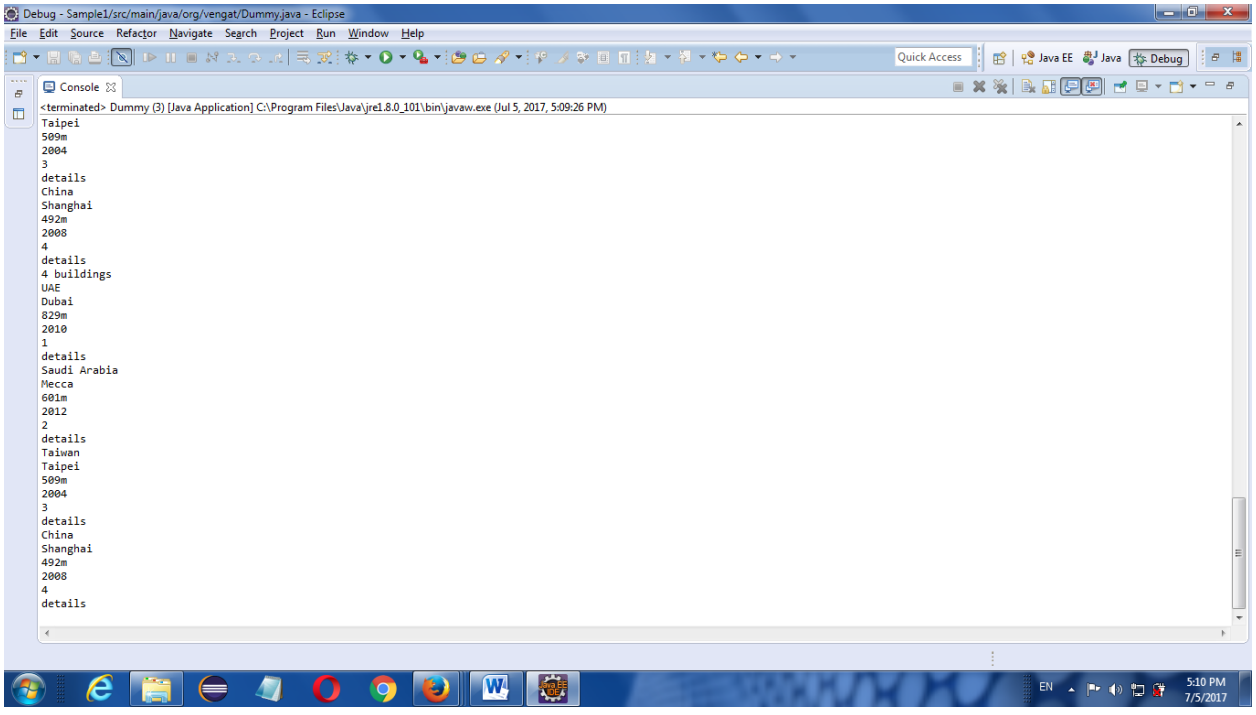
Output:



To print all data's in the table:

```
public class Dummy {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("http://toolsqa.com/automation-practice-table/");
	 List<WebElement> tRows = driver.findElements(By.tagName("tr"));
	 for(WebElement rows:tRows){
		List<WebElement> tData = driver.findElements(By.tagName("td"));
		for(WebElement data:tData){
			System.out.println(data.getText());
		}

	 }

	}
}
```

Output:



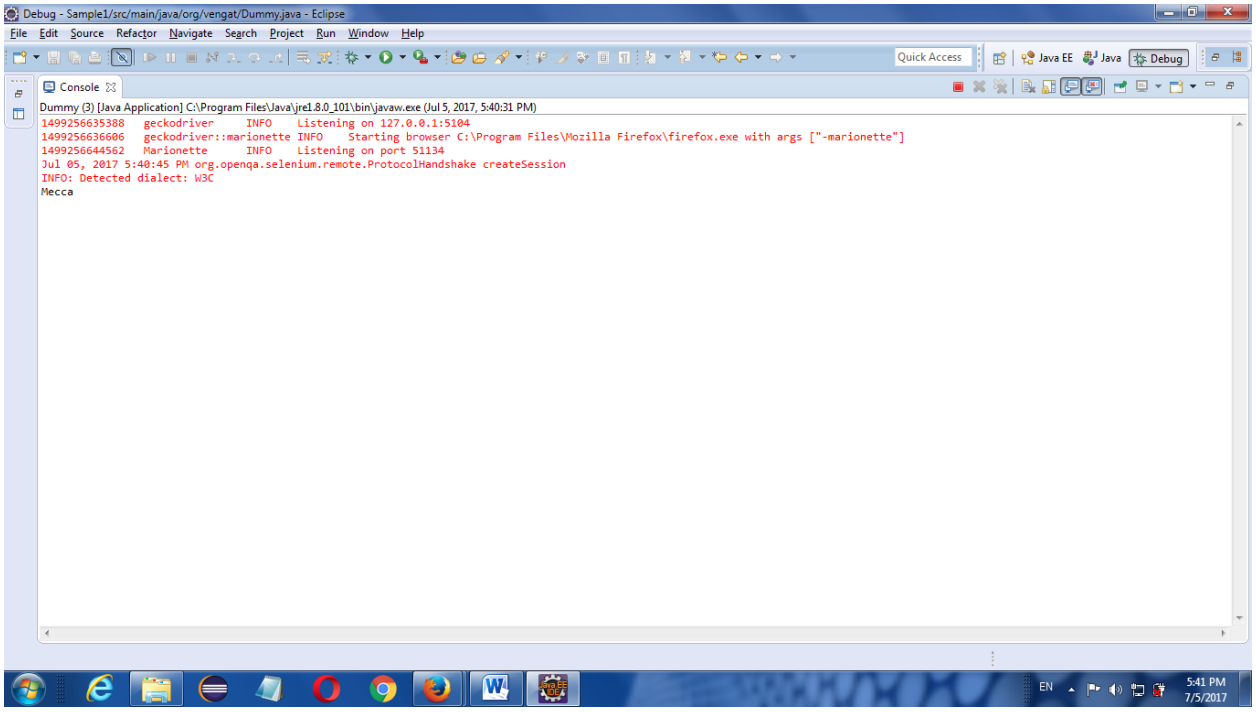
Using normal for loop:

```
public class Dummy {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("http://toolsqa.com/automation-practice-table/");
	 List<WebElement> tRows = driver.findElements(By.tagName("tr"));
	 for(int i=0;i<tRows.size();i++){
		 List<WebElement> tData = driver.findElements(By.tagName("td"));
		 for(int j=0;j<tData.size();j++){
			System.out.println(tData.get(j).getText());
		 }

	 }

	}
}
```

1. **To print particular data only:**

```
public class Dummy {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("http://toolsqa.com/automation-practice-table/");
	 List<WebElement> tRows = driver.findElements(By.tagName("tr"));
	 for(int i=0;i<tRows.size();i++){
		 List<WebElement> tData = driver.findElements(By.tagName("td"));
		 for(int j=0;j<tData.size();j++){
			if(tData.get(j).getText().equals("Mecca")){
			System.out.println(tData.get(j).getText());
		 }

	 }

	 }}}
```

Output:


Debug - Sample1/src/main/java/org/vengat/Dummy.java - Eclipse
File Edit Source Refactor Navigate Search Project Run Window Help
Quick Access
Java EE
Java
Debug
Console
Dummy (3) [Java Application] C:\Program Files\Java\jre1.8.0_101\bin\javaw.exe (Jul 5, 2017, 5:40:31 PM)
1499256635388 geckodriver INFO Listening on 127.0.0.1:5104
1499256636606 geckodriver::marionette INFO Starting browser C:\Program Files\Mozilla Firefox\firefox.exe with args ["-marionette"]
1499256644562 Marionette INFO Listening on port 51134
Jul 05, 2017 5:40:45 PM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
Mecca
EN
5:41 PM
7/5/2017

2. **To print relevant data(Dynamic table)**

```
public class Dummy {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("http://toolsqa.com/automation-practice-table/");
	 List<WebElement> tRows = driver.findElements(By.tagName("tr"));
	 for(int i=0;i<tRows.size();i++){
		 List<WebElement> tData = driver.findElements(By.tagName("td"));
		 for(int j=0;j<tData.size();j++){
			 if(tData.get(j).getText().equals("Dubai")){
driver.findElement(By.xpath(".//*[@id='content']/table/tbody/tr["+i+"]/td[6]/a"));
			 System.out.println(tData.get(j).getText());
		 }

	 }

	 }
}
}
```

JavascriptExecutor:

- JavascriptExecutor is an interface which is used to execute the javascript statements.
- Using javascript we can scroll the web page.

Example:

Write a Script to scroll down and scroll up the window using pixel

```
public class Login {

	public static void main(String[] args) throws InterruptedException {

		System.setProperty("webdriver.chrome.driver",
				"C:\\Users\\10655967\\eclipse-
workspace\\demo\\driver\\chromedriver.exe");
		WebDriver driver = new ChromeDriver();
		driver.get("https://www.seleniumhq.org/download/");

		JavascriptExecutor j = (JavascriptExecutor) driver;

		//To scroll down
		j.executeScript("window.scrollBy(0,500)");

		Thread.sleep(3000);
		//To scroll up
		j.executeScript("window.scrollBy(0,-500)");

	}

}
```

Note:

Here widow represents current window and scrollBy is a method to scroll the window

Example2 :

Write a Script to scroll down and scroll up the window upto 50px for 10 times

```
public class Login {

	public static void main(String[] args) throws InterruptedException {

		System.setProperty("webdriver.chrome.driver",
				"C:\\Users\\10655967\\eclipse-
workspace\\demo\\driver\\chromedriver.exe");
		WebDriver driver = new ChromeDriver();
		driver.get("https://www.seleniumhq.org/download/");

		JavascriptExecutor j = (JavascriptExecutor) driver;
```

```
		//To scroll down
		for (int i = 0; i < 10; i++) {
			j.executeScript("window.scrollBy(0,50)");
			Thread.sleep(500);
		}



		Thread.sleep(3000);
		//To scroll up
		for (int i = 0; i < 10; i++) {
			j.executeScript("window.scrollBy(0,-50)");
			Thread.sleep(500);
		}

	}
```

Example3 :

Write a Script to scroll web page upto specified element

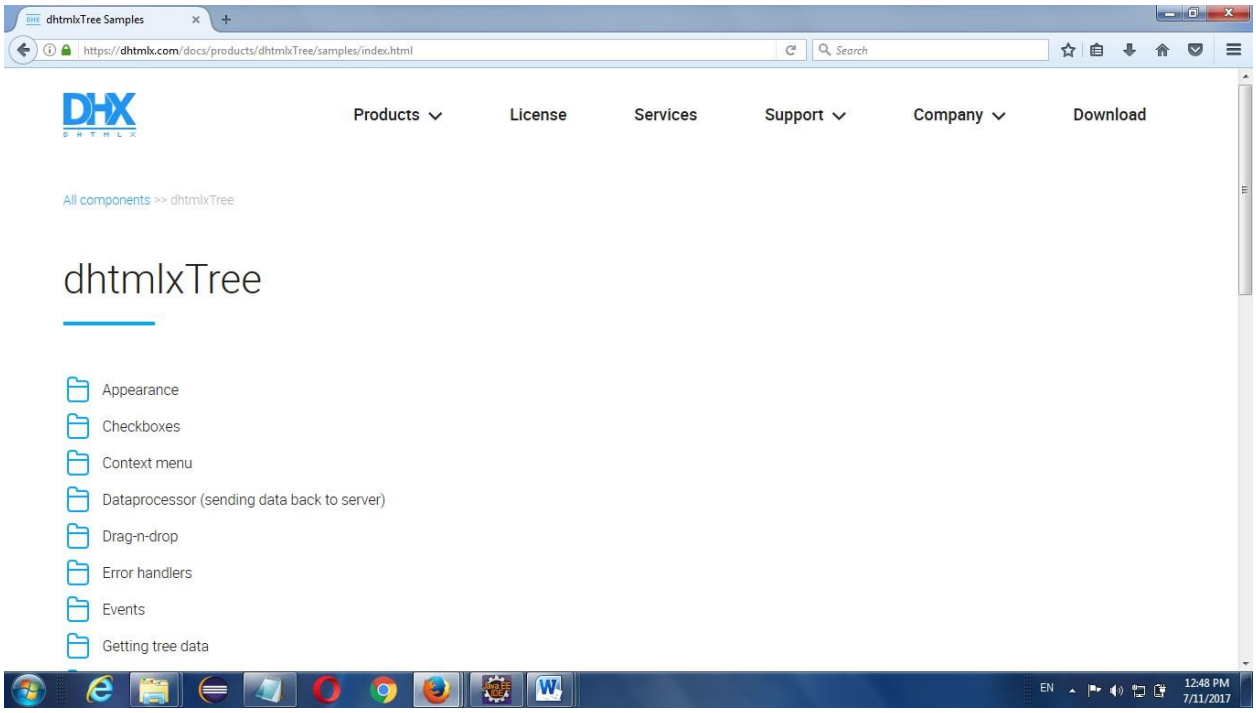
- In this method, we first assign up to which path locator/web element we want to down/up and perform

Example Program:

```
public class dummy {


	public static void main(String[] args) throws InterruptedException {
		// TODO Auto-generated method stub
		System.setProperty("webdriver.gecko.driver",
"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe"); WebDriver
		driver=new FirefoxDriver();
		driver.get("https://dhtmlx.com/docs/products/dhtmlxTree/
		"); JavascriptExecutor j=(JavascriptExecutor) driver;
		// assign up to which path we want to down
		WebElement w = driver.findElement(By.xpath("//*[text()='Live
		Demo']"));
		//scroll down up to particular path
```

```
        j.executeScript("arguments[0].scrollIntoView(true)",
        w); Thread.sleep(2000);

        driver.findElement(By.xpath("//*[text()='View more demos']")).click();

    }}
```

Output:



Example4 :

Write a Script to enter textbox value and click using javascript

Syntax:

```
JavascriptExecutor js=(JavascriptExecutor) driver;
js.executeScript("document.getElementById('email').setAttribute('value','Hello')");
```

Another method

```
JavascriptExecutor js=(JavascriptExecutor) driver;
js.executeScript("arguments[0].setAttribute('value','Hello')",webelement);
```

Example program:

```
public class Dummy {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("https://www.facebook.com/");
		//java script declaration
		JavascriptExecutor js=(JavascriptExecutor) driver;

	js.executeScript("document.getElementById('email').setAttribute('value','Hello')");
		// to print the value
		Object s = js.executeScript("return document.getElementById('email').
getAttribute('value')");
		System.out.println(s);
		// to click login
		js.executeScript("return document.getElementById('u_0_r').click()");
}}
```

Another method:

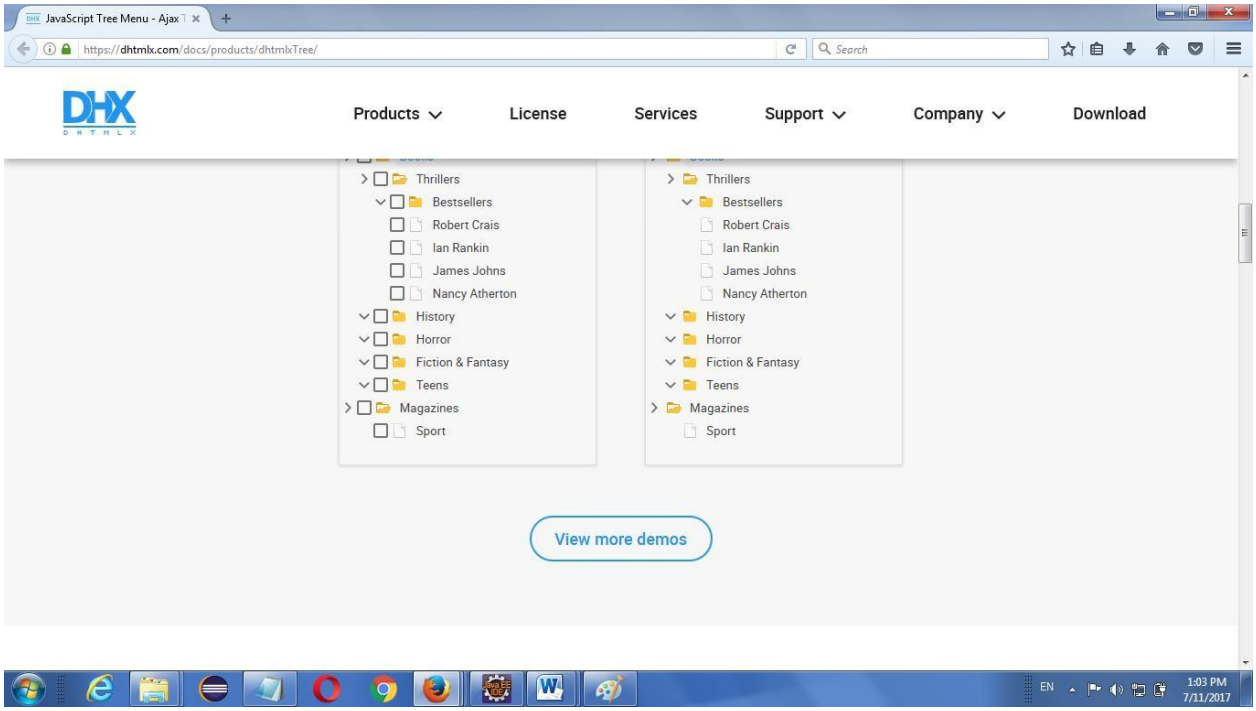
```
public class Dummy {
	public static void main(String[] args) {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("https://www.facebook.com/");
		//java script declaration
		JavascriptExecutor js=(JavascriptExecutor) driver;
WebElement w=driver.findelement(By.Id('email');
		js.executeScript("arguments[0].setAttribute('value','Hello')",w);
		WebElement w1=driver.findelement(By.Id('u_0_r');
js.executeScript("arguments[0].click()",w1);

}}
```

Using Page down:

- In this method, we can scroll down one single page from the first page

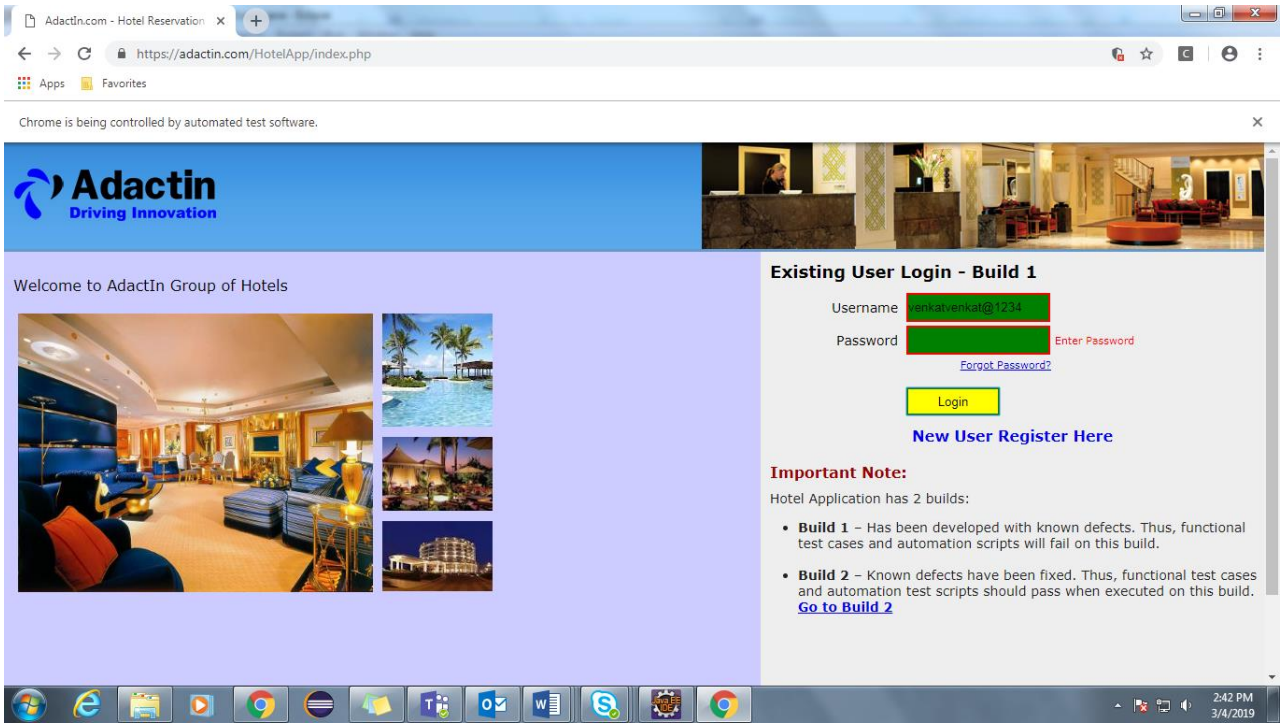
```
public class dummy1 {


        public static void main(String[] args) {
                System.setProperty("webdriver.gecko.dri
                ver",
"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe"); WebDriver
                driver=new FirefoxDriver();
                driver.get("https://dhtmlx.com/docs/products/dhtmlxTree/
                "); JavascriptExecutor j=(JavascriptExecutor) driver;

                WebElement w = driver.findElement(By.xpath("//*[text()='Live
                Demo']"));

          w.sendKeys(Keys.PAGE_DOWN);

        }
}
```

Output:



Highlighting the webelement using javascript

```
public class Login {

	public static void main(String[] args) throws InterruptedException {

		System.setProperty("webdriver.chrome.driver",
				"C:\\Users\\10657527\\Downloads\\chromedriver_win32 (1)\\chromedriver.exe");
		WebDriver driver = new ChromeDriver();
		driver.manage().window().maximize();
		driver.get("https://adactin.com/HotelApp/index.php");

		JavascriptExecutor j = (JavascriptExecutor) driver;

		// username and password highlighted by green color and red box
		WebElement username = driver.findElement(By.id("username"));

		j.executeScript("arguments[0].setAttribute('style','background: green; border: solid 2px red');", username);
		username.sendKeys("venkat");

		WebElement password = driver.findElement(By.id("password"));

		j.executeScript("arguments[0].setAttribute('style','background: green; border: solid 2px red');", password);
		username.sendKeys("venkat@1234");

		Thread.sleep(2000);

		// Login button highlighted by yellow color and green box

		WebElement login = driver.findElement(By.id("login"));
		j.executeScript("arguments[0].setAttribute('style','background: yellow; border: solid 2px green');", login);

		login.click();

	}

 }
```


AdactIn.com - Hotel Reservation
https://adactin.com/HotelApp/index.php
Apps
Favorites
Chrome is being controlled by automated test software.
Adactin
Driving Innovation
Welcome to AdactIn Group of Hotels
Existing User Login - Build 1
Username
venkatvenkat@1234
Password
Enter Password
Forgot Password?
Login
New User Register Here
Important Note:
Hotel Application has 2 builds:
Build 1 – Has been developed with known defects. Thus, functional test cases and automation scripts will fail on this build.
Build 2 – Known defects have been fixed. Thus, functional test cases and automation test scripts should pass when executed on this build.
Go to Build 2
2:42 PM
3/4/2019

SCREENSHOT:

- In order to take screen shot of a webpage we use an interface called TakesScreenShot.
- Steps to take screen shot of a web page.
    - create reference of TakesScreenShot interface.
    - Get the screen shot using getScreenShotAs(). By default it will store screen shots in temp folder.
    - Create destination to store the file using File class.
    - Copy the file from src to destination using copyFile() of FileUtils class.

Note: In order to copy the file from src to dest we use an API called Commons-io which is available in the following web site.

URL:- https://commons.apache.org/proper/commons-io/download_io.cgi

File Name: commons-io-2.6-bin.zip

- Download the file and extract it
- Copy all the jar files and store it jars folder.

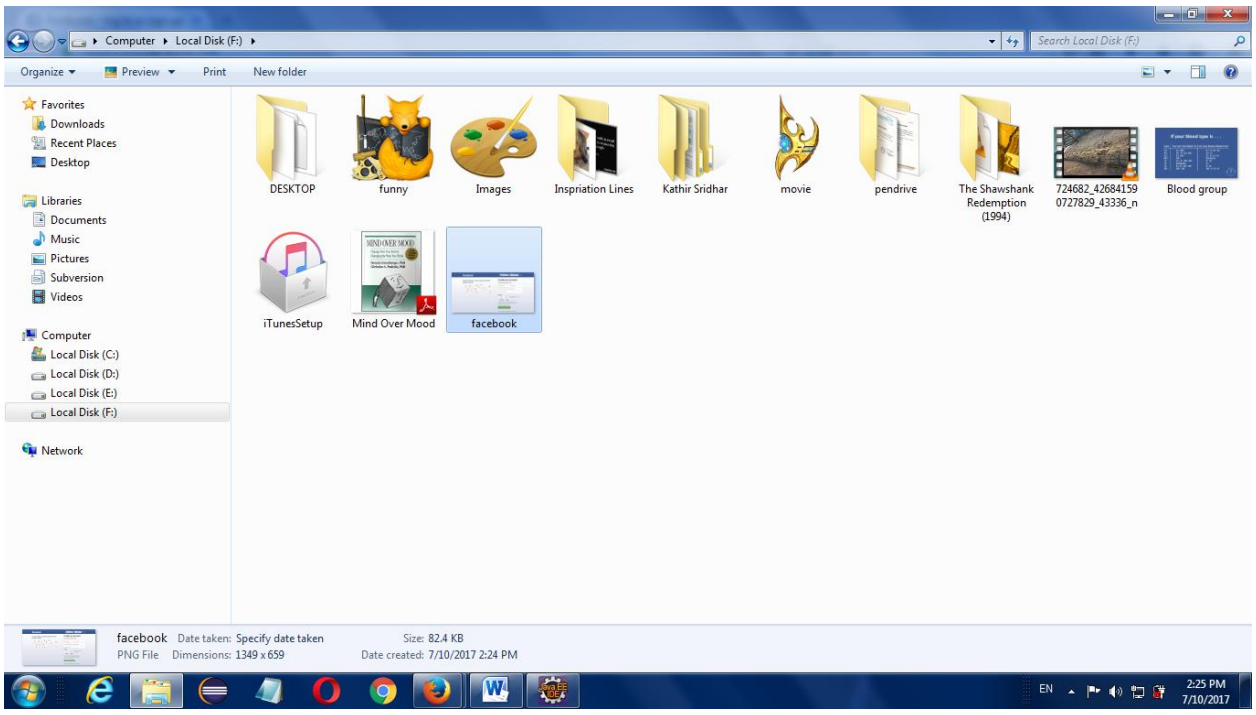
- Add all jars to build path

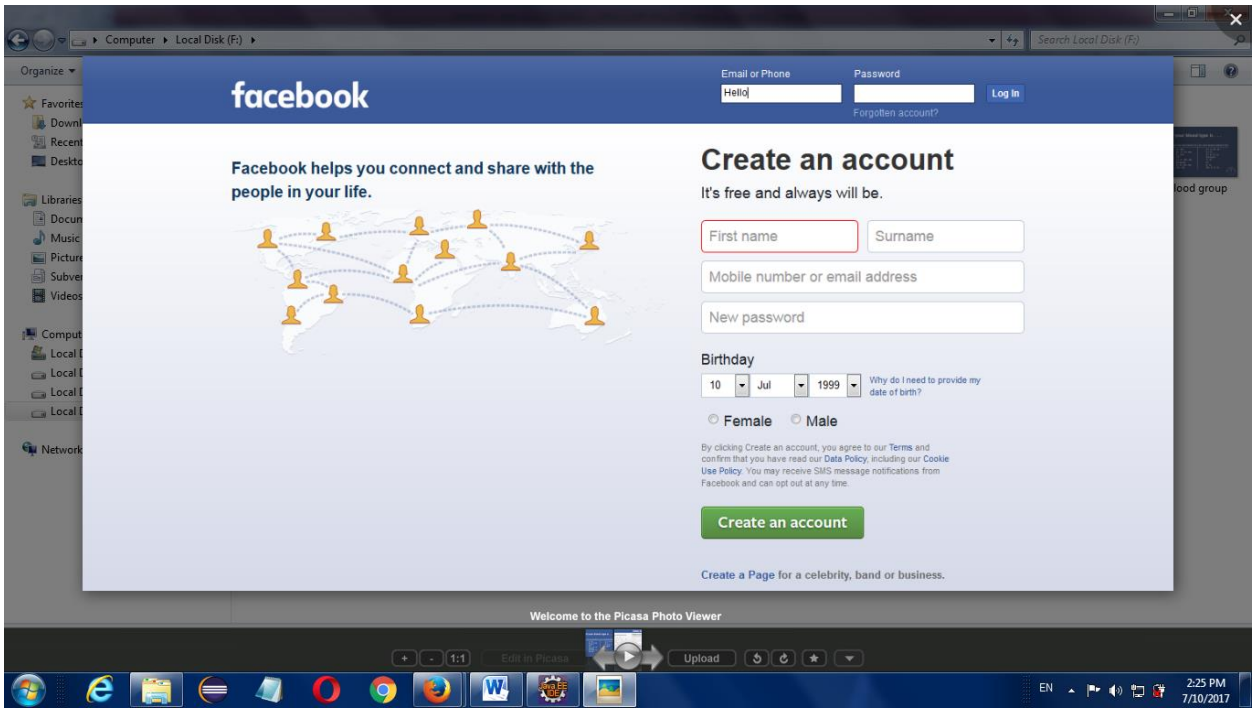
Takescrenshot → interface

Example program:

```
public class Dummy {
	public static void main(String[] args) throws IOException {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("https://www.facebook.com/");
		driver.findElement(By.id("email")).sendKeys("Hello");
		//screenshot declaration
		TakesScreenshot tk=(TakesScreenshot) driver;
		File source= tk.getScreenshotAs(OutputType.FILE);
		File des=new File("F:/facebook.png");
		FileUtils.copyFile(source,des );

}}
```

Output:





MOUSE HOVER ACTION:

Actions:

- Actions class is used to handle the mouse and keyboard actions.
- Actions class should be imported from the package org.openqa.selenium.interactions
- Actions class contains a constructor which takes an argument of type WebDriver

Note:

- When we are using any methods of Actions class, then it is mandatory to call perform()
- Until unless we call perform(), Actions class will never perform the actions.

Handling Drop down menu/Mouse over action:

- When we move the cursor on an element, a list of menus will be displayed. These type of elements are called as Drop down menus.
- We can handle this drop down menu or mouse over action using moveToElement() of Actions class

Example:

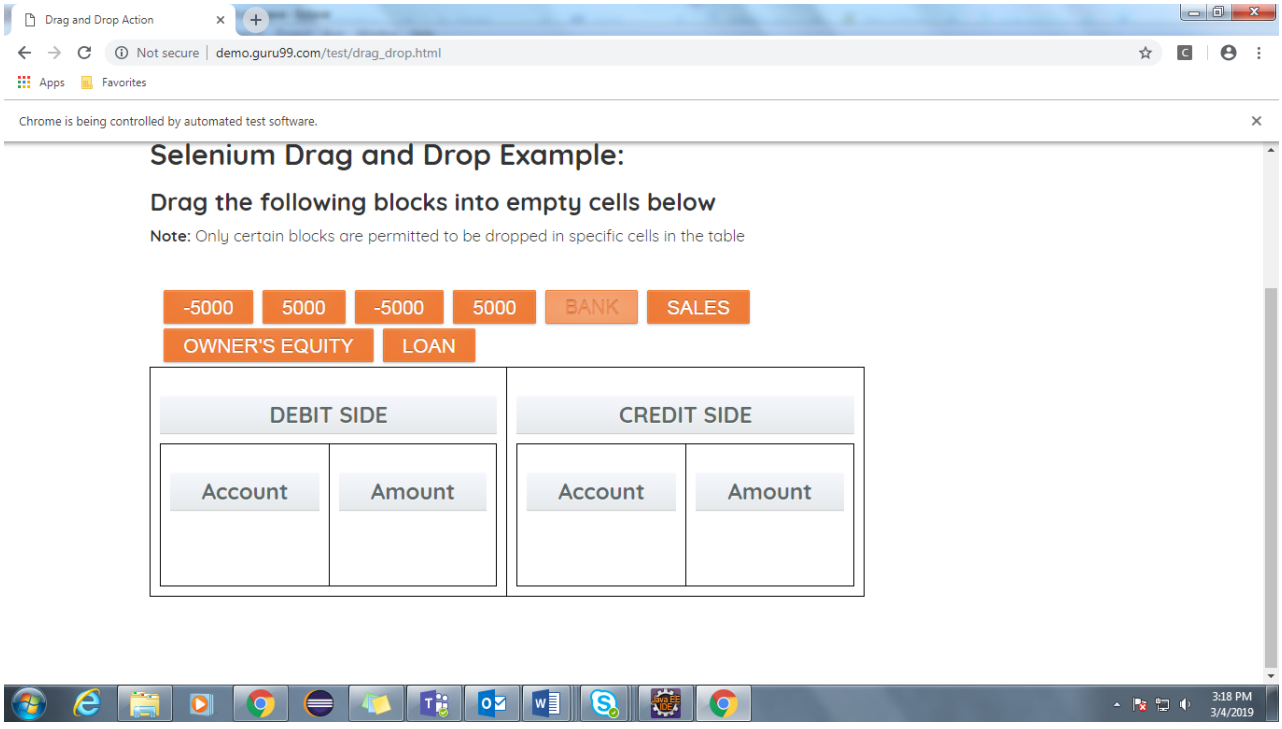
```
public class Login {

	public static void main(String[] args) throws InterruptedException {

		System.setProperty("webdriver.chrome.driver",
				"C:\\Users\\10657527\\Downloads\\chromedriver_win32
(1)\\chromedriver.exe");
		WebDriver driver = new ChromeDriver();
		driver.manage().window().maximize();
		driver.get("http://www.greenstechnologys.com/");

		WebElement courses = driver.findElement(By.linkText("COURSES"));

		Actions a=new Actions(driver);

		a.moveToElement(courses).perform();

		Thread.sleep(2000);

		WebElement devOpTraining =
driver.findElement(By.xpath("//span[text()='DevOps Training']"));

		a.click(devOpTraining).perform();



	}

}
```

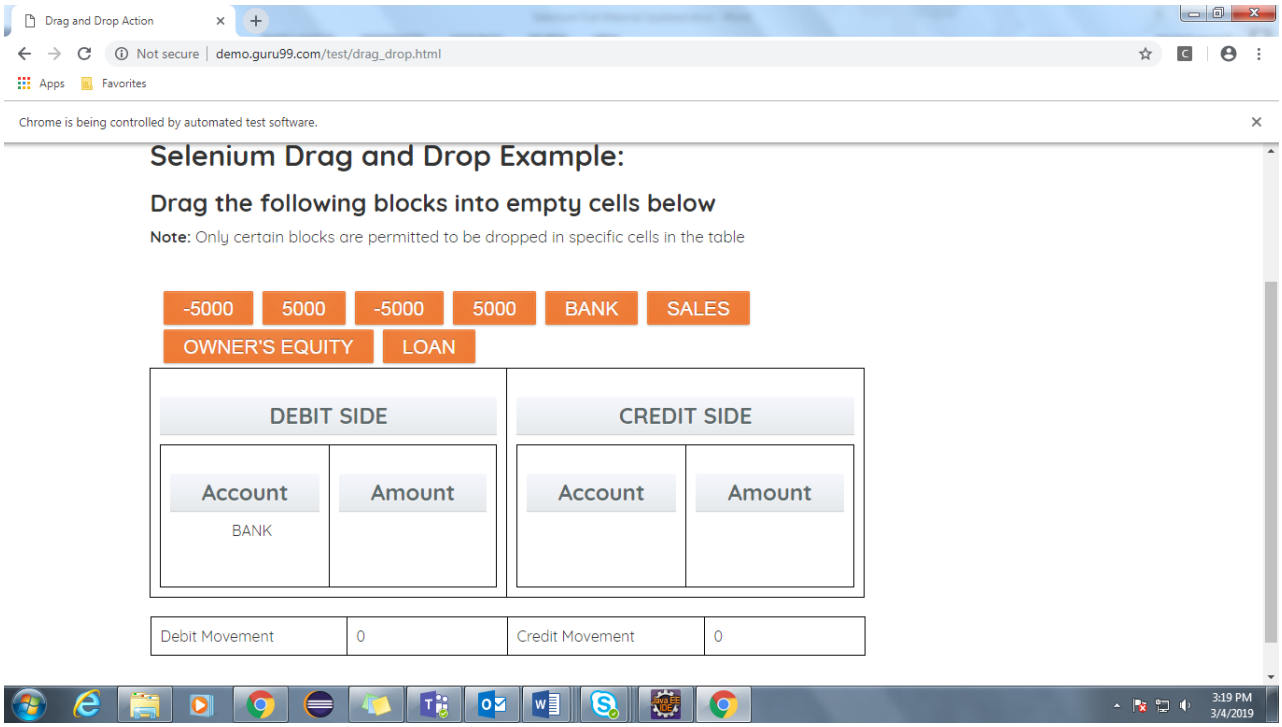
DRAG & DROP AND RIGHT CLICK:

- We can handle this drag and drop action using dragAndDrop() of Actions class.
- dragAndDrop() takes 2 argument of type WebElement. They are,
  - source
  - target

Example:

```
public class Login {

        public static void main(String[] args) throws InterruptedException {

                System.setProperty("webdriver.chrome.driver",
                                "C:\\Users\\10657527\\Downloads\\chromedriver_win32
(1)\\chromedriver.exe");
                WebDriver driver = new ChromeDriver();
                driver.manage().window().maximize();
                driver.get("http://demo.guru99.com/test/drag_drop.html");

                Actions a = new Actions(driver);

                WebElement source = driver.findElement(By.xpath("//a[text()=' BANK
']"));

                WebElement des =
driver.findElement(By.xpath("(//li[@class='placeholder'])[1]"));

                Thread.sleep(2000);

                a.dragAndDrop(source, des).perform();}}
```





How to perform drag and drop action without using dragAndDrop()?

Ans: act.clickAndHold(src).moveToElement(target).release().perform();

```
public class Login {

	public static void main(String[] args) throws InterruptedException {

		System.setProperty("webdriver.chrome.driver",
				"C:\\Users\\10657527\\Downloads\\chromedriver_win32 (1)\\chromedriver.exe");
		WebDriver driver = new ChromeDriver();
		driver.manage().window().maximize();
		driver.get("http://demo.guru99.com/test/drag_drop.html");

		Actions a = new Actions(driver);

		WebElement source = driver.findElement(By.xpath("//a[text()=' BANK ']"));

		WebElement des = driver.findElement(By.xpath("(//li[@class='placeholder'])[1]"));
```

```
		Thread.sleep(2000);

		a.clickAndHold(source).moveToElement(des).release(des).perform();
	}

}
```

RIGHT CLICK:

Handling context click action:

- Right clicking on an element is called as context click.
- After right clicking on an element, the options which are displayed are called as context menus.
- We can handle this context click action using contextClick () of Actions class.
- contextClick() takes 1 argument of type WebElement where in we have to pass address of the element.
- We can handle the context menus by using a class called Robot.
- Robot class is used to perform keyboard action
- In Robot class, to press the key we use keypress() and to release the key we use keyRelease().

Example:

```
public class Login {

	public static void main(String[] args) throws InterruptedException, Throwable {

		System.setProperty("webdriver.chrome.driver",
				"C:\\Users\\10657527\\Downloads\\chromedriver_win32 (1)\\chromedriver.exe");
		WebDriver driver = new ChromeDriver();
		driver.manage().window().maximize();
		driver.get("https://www.google.com/");

		Actions a = new Actions(driver);


		WebElement gmail = driver.findElement(By.linkText("Gmail"));

		Thread.sleep(2000);

		a.contextClick(gmail).perform();
```

```
                // Using robot class we can open gmail in new tab


                Robot r=new Robot();

                r.keyPress(KeyEvent.VK_DOWN);
                r.keyRelease(KeyEvent.VK_DOWN);

                r.keyPress(KeyEvent.VK_ENTER);
                r.keyRelease(KeyEvent.VK_ENTER);

        }

}
```

Handling composite action:

- Performing multiple actions at a time on a an element is called as composite actions.
- We can handle composite action by using build().perform().
- In latest version of selenium, build() is already integrated with perform(). So we don't have to call build() explicitly.

What are the actions we can perform by using Actions class?

Actions	Methods
Drop down menu/Mouse over	moveToElement()
Drag and Drop	dragAndDrop()
Double click	doubleClick()
Context click(Right click)	contextClick()
Composite Action	build().perform()/perform()

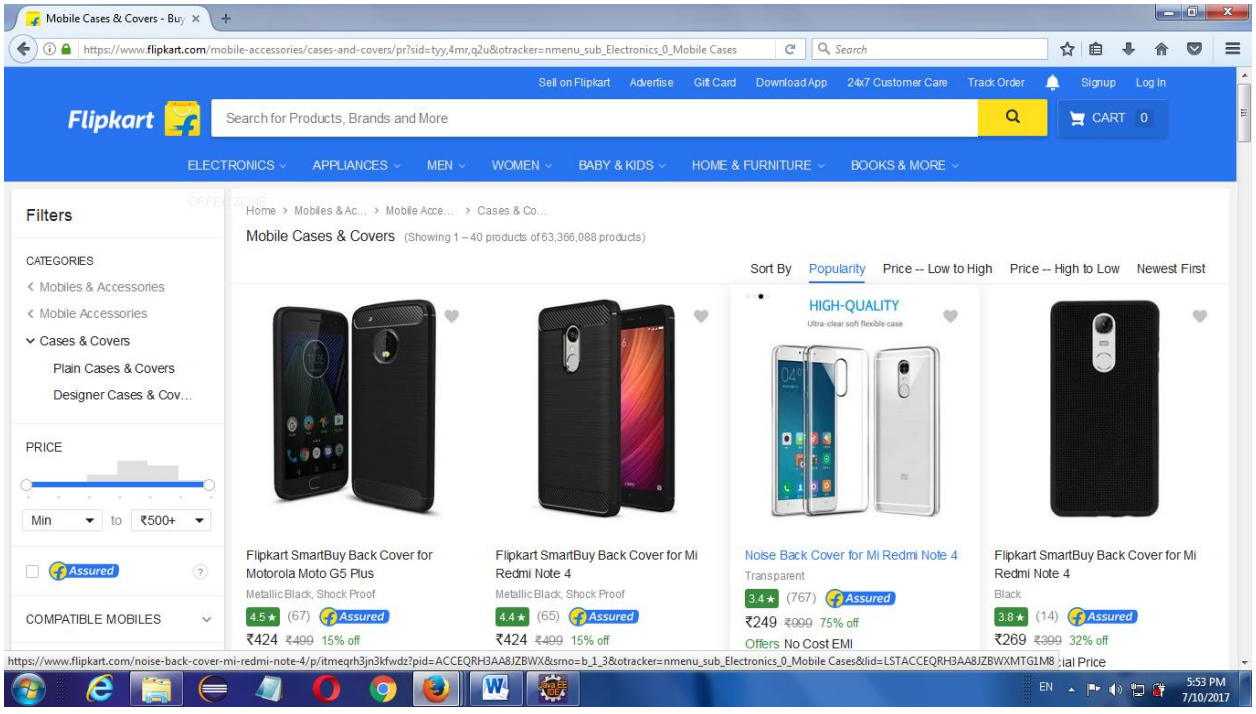
EXERCISE:

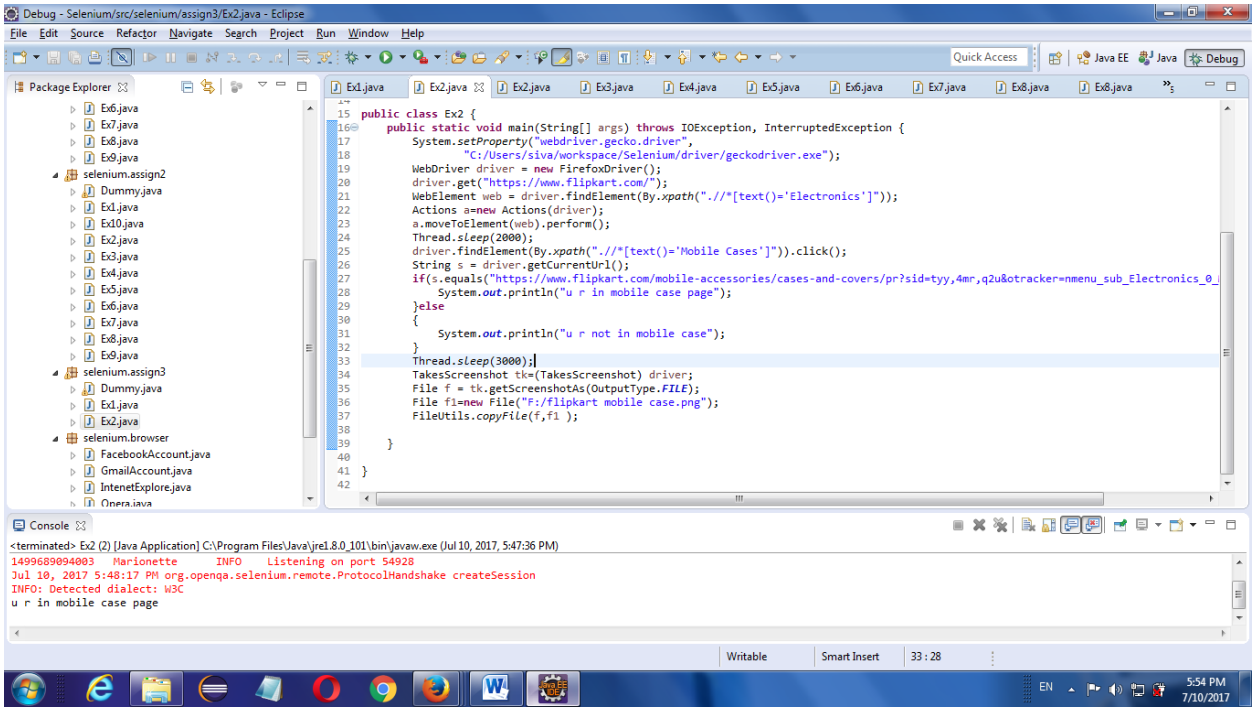
1.Go to flipkart,com, click mobile case using mouse over action,&check the particular title is correct and take screenshot :

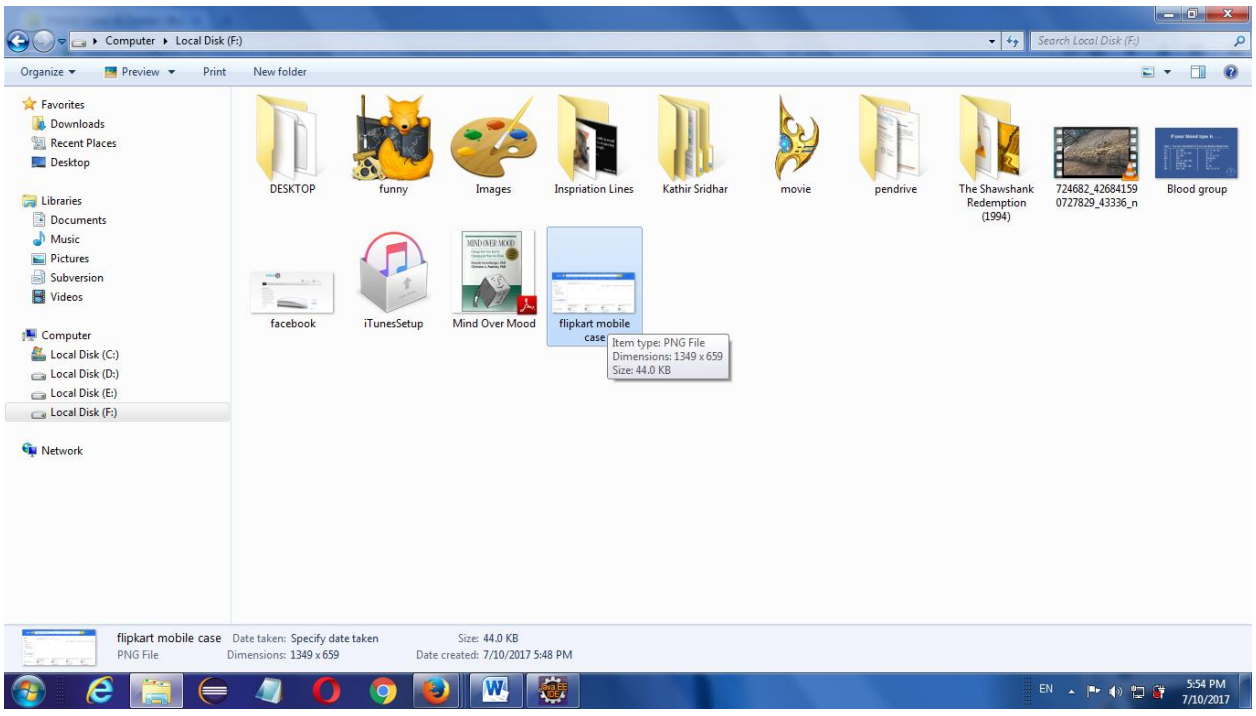
```
public class Ex2 {
        public static void main(String[] args) throws IOException, InterruptedException
{
                System.setProperty("webdriver.gecko.driver",

        "C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
                WebDriver driver = new FirefoxDriver();
```

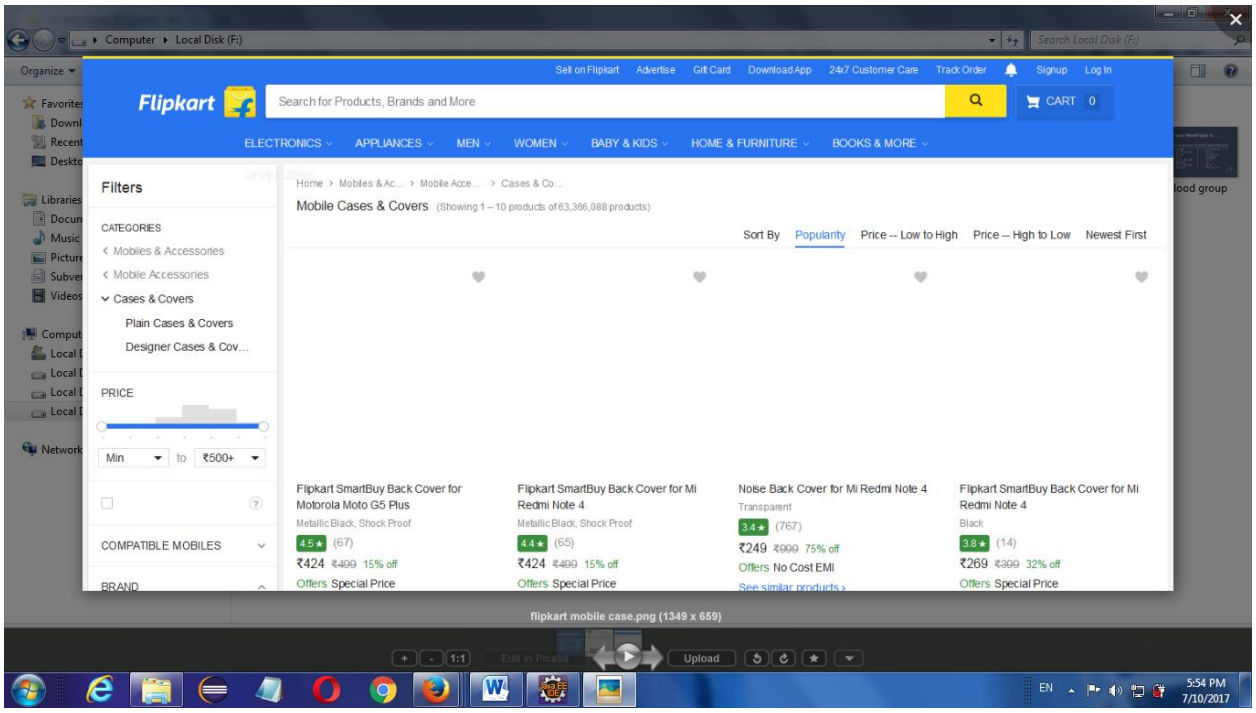
```
                driver.get("https://www.flipkart.com/");
                WebElement web =
driver.findElement(By.xpath(".//*[text()='Electronics']"));
                Actions a=new Actions(driver);
                a.moveToElement(web).perform();
                Thread.sleep(2000);
                driver.findElement(By.xpath(".//*[text()='Mobile Cases']")).click();
                String s = driver.getCurrentUrl();
                if(s.equals("https://www.flipkart.com/mobile-accessories/cases-and-
covers/pr?sid=tyy,4mr,q2u&otracker=nmenu_sub_Electronics_0_Mobile%20Cases")){
                        System.out.println("u r in mobile case page");
                }else
                {
                        System.out.println("u r not in mobile case");
                }
                Thread.sleep(3000);
                TakesScreenshot tk=(TakesScreenshot) driver;
                File f = tk.getScreenshotAs(OutputType.FILE);
                File f1=new File("F:/flipkart mobile case.png");
                FileUtils.copyFile(f,f1 );

        }

}
```

Output:




Debug - Selenium/src/selenium/assign3/Ex2.java - Eclipse
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
Ex1.java
Ex2.java
Ex3.java
Ex4.java
Ex5.java
Ex6.java
Ex7.java
Ex8.java
Ex8.java
selenium.assign2
Dummy.java
Ex1.java
Ex10.java
Ex2.java
Ex3.java
Ex4.java
Ex5.java
Ex6.java
Ex7.java
Ex8.java
Ex9.java
selenium.assign3
Dummy.java
Ex1.java
Ex2.java
selenium.browser
FacebookAccount.java
GmailAccount.java
IntenetExplore.java
Opera.java
public class Ex2 {
public static void main(String[] args) throws IOException, InterruptedException {
System.setProperty("webdriver.gecko.driver",
"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
WebDriver driver = new FirefoxDriver();
driver.get("https://www.flipkart.com/");
WebElement web = driver.findElement(By.xpath(".//*[text()='Electronics']"));
Actions a=new Actions(driver);
a.moveToElement(web).perform();
Thread.sleep(2000);
driver.findElement(By.xpath(".//*[text()='Mobile Cases']")).click();
String s = driver.getCurrentUrl();
if(s.equals("https://www.flipkart.com/mobile-accessories/cases-and-covers/pr?sid=tyy,4mr,q2u&otracker=nmenu_sub_Electronics_0_
System.out.println("u r in mobile case page");
}else
{
System.out.println("u r not in mobile case");
}
Thread.sleep(3000);
TakesScreenshot tk=(TakesScreenshot) driver;
File f = tk.getScreenshotAs(OutputType.FILE);
File f1=new File("F:/flipkart mobile case.png");
FileUtils.copyFile(f,f1);
}
}
Console
<terminated> Ex2 (2) [Java Application] C:\Program Files\Java\jre1.8.0_101\bin\javaw.exe (Jul 10, 2017, 5:47:36 PM)
1499689094003 Marionette INFO Listening on port 54928
Jul 10, 2017 5:48:17 PM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
u r in mobile case page
Writable
Smart Insert
33 : 28
5:54 PM
7/10/2017


Computer ▸ Local Disk (F:)
Search Local Disk (F:)
Organize
Preview
Print
New folder
Favorites
Downloads
Recent Places
Desktop
Libraries
Documents
Music
Pictures
Subversion
Videos
Computer
Local Disk (C:)
Local Disk (D:)
Local Disk (E:)
Local Disk (F:)
Network
DESKTOP
funny
Images
Inspriation Lines
Kathir Sridhar
movie
pendrive
The Shawshank Redemption (1994)
724682_42684159 0727829_43336_n
Blood group
facebook
iTunesSetup
Mind Over Mood
flipkart mobile case
Item type: PNG File
Dimensions: 1349 x 659
Size: 44.0 KB
flipkart mobile case Date taken: Specify date taken
PNG File Dimensions: 1349 x 659
Size: 44.0 KB
Date created: 7/10/2017 5:48 PM
5:54 PM
7/10/2017

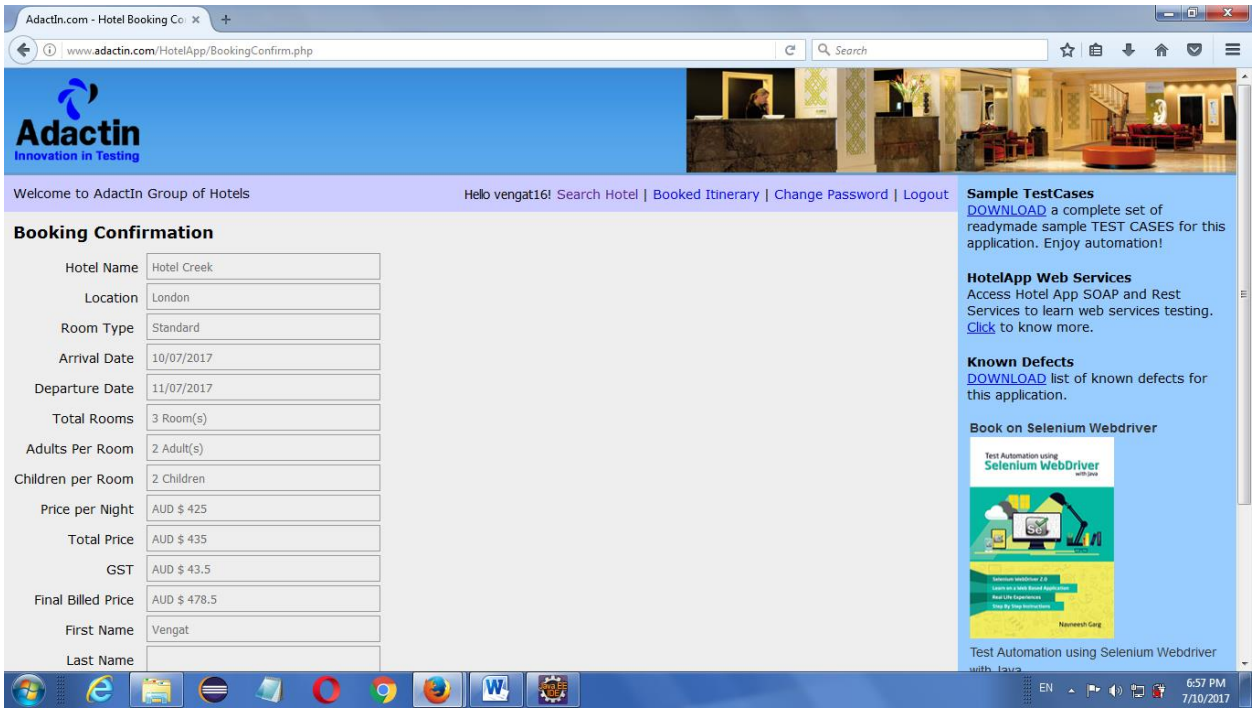


2.Adactin.com registration:

```
public class Ex3 {
	public static void main(String[] args) throws IOException, InterruptedException
{
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
	driver.get("http://www.adactin.com/HotelApp/index.php");
	driver.findElement(By.id("username")).sendKeys("vengat16");
	driver.findElement(By.id("password")).sendKeys("Karthick");
	driver.findElement(By.id("login")).click();
	driver.findElement(By.id("location")).sendKeys("London");
	driver.findElement(By.id("hotels")).sendKeys("Hotel Sunshine");
	driver.findElement(By.id("room_type")).sendKeys("Super Deluxe");
	driver.findElement(By.id("room_nos")).sendKeys("3 - Three");
	driver.findElement(By.id("datepick_in")).sendKeys("11/07/2017");
	driver.findElement(By.id("datepick_out")).sendKeys("12/07/2017");
	driver.findElement(By.id("adult_room")).sendKeys("2 - Two");
	driver.findElement(By.id("child_room")).sendKeys("2 - Two");
	driver.findElement(By.id("Submit")).click();
	driver.findElement(By.id("radiobutton_0")).click();
	driver.findElement(By.id("continue")).click();
	driver.findElement(By.id("first_name")).sendKeys("Vengat");
```

```
        driver.findElement(By.id("last_name")).sendKeys("Ram");
        driver.findElement(By.id("address")).sendKeys("no.20, dubai kurukku
santhu,dubai");
        driver.findElement(By.id("cc_num")).sendKeys("1234567890123456");
        driver.findElement(By.id("cc_type")).sendKeys("VISA");
        driver.findElement(By.id("cc_exp_month")).sendKeys("March");
        driver.findElement(By.id("cc_exp_year")).sendKeys("2020");
        driver.findElement(By.id("cc_cvv")).sendKeys("123");
        driver.findElement(By.id("book_now")).click();
}}
```

Output:


AdactIn.com - Hotel Booking Co
www.adactin.com/HotelApp/BookingConfirm.php
Search
Adactin
Innovation in Testing
Welcome to AdactIn Group of Hotels
Hello vengat16! Search Hotel | Booked Itinerary | Change Password | Logout
Booking Confirmation
Hotel Name Hotel Creek
Location London
Room Type Standard
Arrival Date 10/07/2017
Departure Date 11/07/2017
Total Rooms 3 Room(s)
Adults Per Room 2 Adult(s)
Children per Room 2 Children
Price per Night AUD $ 425
Total Price AUD $ 435
GST AUD $ 43.5
Final Billed Price AUD $ 478.5
First Name Vengat
Last Name
Sample TestCases
DOWNLOAD a complete set of readymade sample TEST CASES for this application. Enjoy automation!
HotelApp Web Services
Access Hotel App SOAP and Rest Services to learn web services testing. Click to know more.
Known Defects
DOWNLOAD list of known defects for this application.
Book on Selenium Webdriver
Test Automation using Selenium WebDriver
Test Automation using Selenium Webdriver
EN
6:57 PM
7/10/2017

3.*Gmail login using javascript:*

```
public class Ex1 {

        public static void main(String[] args) throws IOException,
InterruptedException {
                System.setProperty("webdriver.gecko.driver",

        "C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
                WebDriver driver = new FirefoxDriver();

        driver.get("https://accounts.google.com/signin/v2/identifier?service=mail&passive
```

```
=true&rm=false&continue=https%3A%2F%2Fmail.google.com%2Fmail%2F&ss=1&scc
=1&ltmpl=default&ltmplcache=2&emr=1&osid=1&flowName=GlifWebSignIn&flowEnt
ry=ServiceLogin");
                        Thread.sleep(5000);
                        WebElement w =
driver.findElement(By.xpath(".//*[@id='identifierId']"));
                        JavascriptExecutor js=(JavascriptExecutor) driver;

        js.executeScript("arguments[0].setAttribute('value','venkat12345')",w);
                        WebElement w1 =
driver.findElement(By.xpath(".//*[text()='Next']"));
                        js.executeScript("arguments[0].click()",w1);
                        Thread.sleep(6000);
                        WebElement w2 =
driver.findElement(By.xpath("//*[@name='password']"));

        js.executeScript("arguments[0].setAttribute('value','venkat12345')",w2);
                        Thread.sleep(6000);
                        WebElement w3 =
driver.findElement(By.xpath(".//*[@id='passwordNext']/div[2]"));
                        js.executeScript("arguments[0].click()",w3);


        }}
```

ALERTS:

- There are 3 type in javascript pop-up. They are,
    - Alert
    - Confirmation
    - Prompt

Characteristics of javascript pop-up

- We can not move the pop up.
- We can not inspect the pop up.
- It is black and white in color
- If it contains only ok button then it is alert pop-up.
- If it contains only ok and cancel button then it is confirmation pop-up.
- If it contains only Text box, ok and cancel button then it is prompt pop-up.

- we can handle any javascript pop up by using the statement

  ```
  Alert a = driver.switchTo().alert();
  ```

- In Alert interface we have different methods. They are
  - accept()→ click on Ok
  - dismiss()→ click on cancel
  - getText()→ get the text
  - sendKeys()→ enter the text
- If the javascript pop-up is not present and still if we try to switch into it, then it will throw NoAlertPresentException

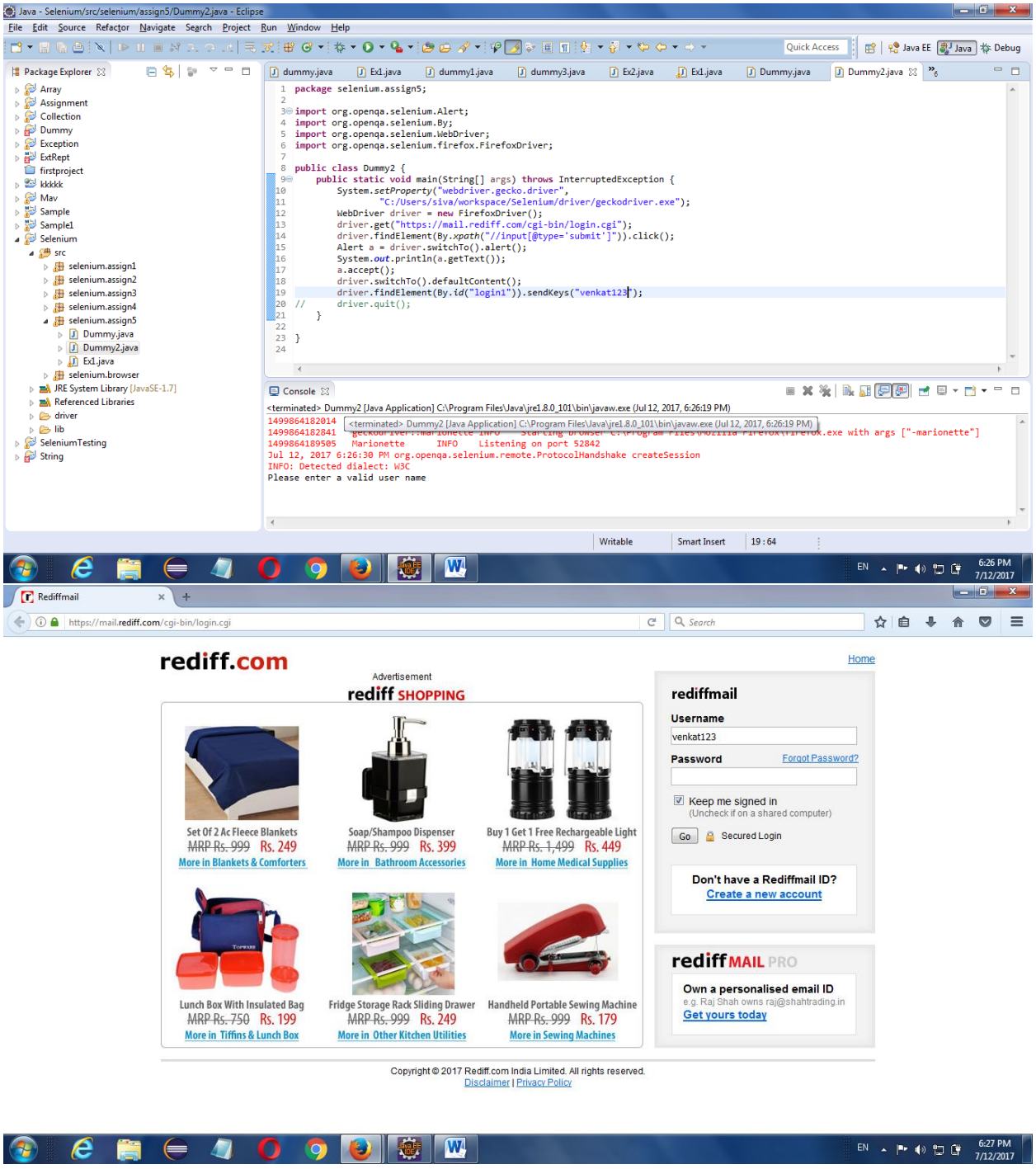
1. **Simple:**
   - In this method, we just click single ok button in the alert.

Example program:

```
public class Dummy2 {
	public static void main(String[] args) throws InterruptedException {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("https://mail.rediff.com/cgi-bin/login.cgi");
		driver.findElement(By.xpath("//input[@type='submit']")).click();
		Alert a = driver.switchTo().alert();
		System.out.println(a.getText());
		a.accept();
		driver.switchTo().defaultContent();
		driver.findElement(By.id("login1")).sendKeys("venkat123");
		driver.quit();
	}
}
```

Here,
alert → class

Output:



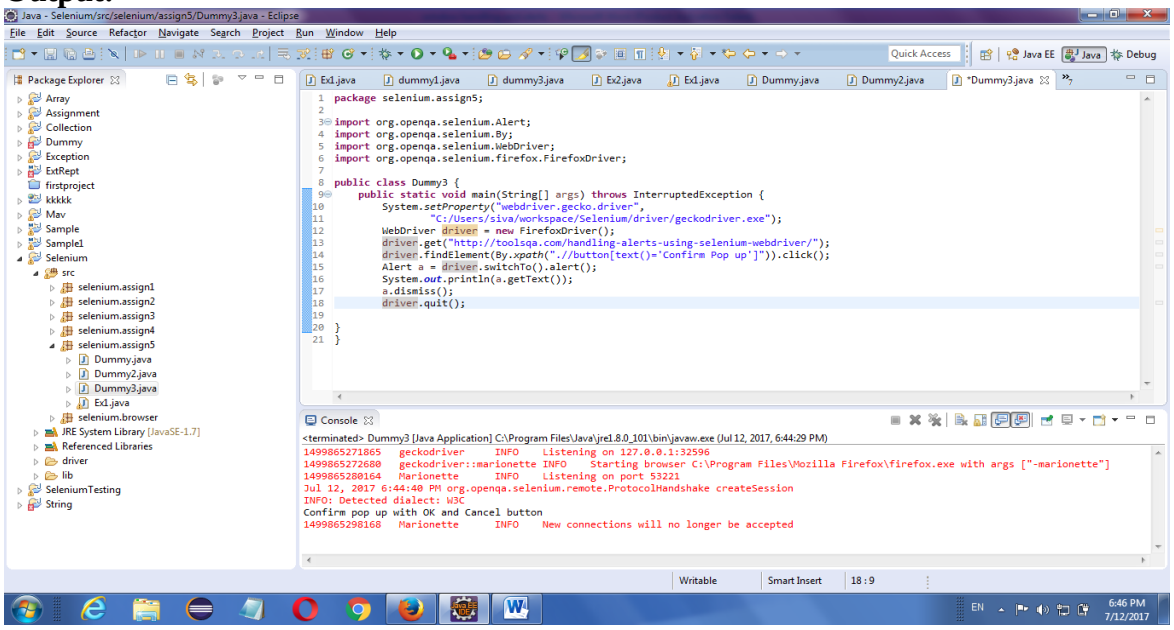
2. Confirm:

- In this method, we have to click OK or Cancel, if we click OK/Cancel, then it will confirm

Example program:

```
public class Dummy3 {
	public static void main(String[] args) throws InterruptedException {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("http://toolsqa.com/handling-alerts-using-selenium-webdriver/");
		driver.findElement(By.xpath(".//button[text()='Confirm Pop up']")).click();
		Alert a = driver.switchTo().alert();
		System.out.println(a.getText());
		a.dismiss();
		driver.quit();}
```

Output:



TOOLSQA | Free QA Automa
toolsqa.com/handling-alerts-using-selenium-webdriver/
TOOLSQA
HOME TUTORIAL TOOLS TRAININGS FORUM VIDEOS BLOGS DEMO SITES ABOUT
There are a few types of alerts which JavaScript defines. This page is a test page which contains all these alerts. You can click on write programs to handle these alerts. The tutorial is located here
Simple Alert Pop up
Simple Alert
HTML code for such types of pop is
document.alert("This is a simple alert");
//or
alert("This is a simple alert");
Confirm Alert box
Confirm Pop up
You have clicked on Cancel
HTML code for Confirm alerts is
var popuResult = confirm("Confirm pop up with OK and Cancel button");
Prompt Alert box
Prompt Pop up
Buy a Lenovo™ laptop and get a Puma voucher up to ₹3000*
Up to 3 years of warranty
Attractive EMI Offers
Buy Now
Lenovo
SELENIUM TRAINING
6:48 PM
7/12/2017

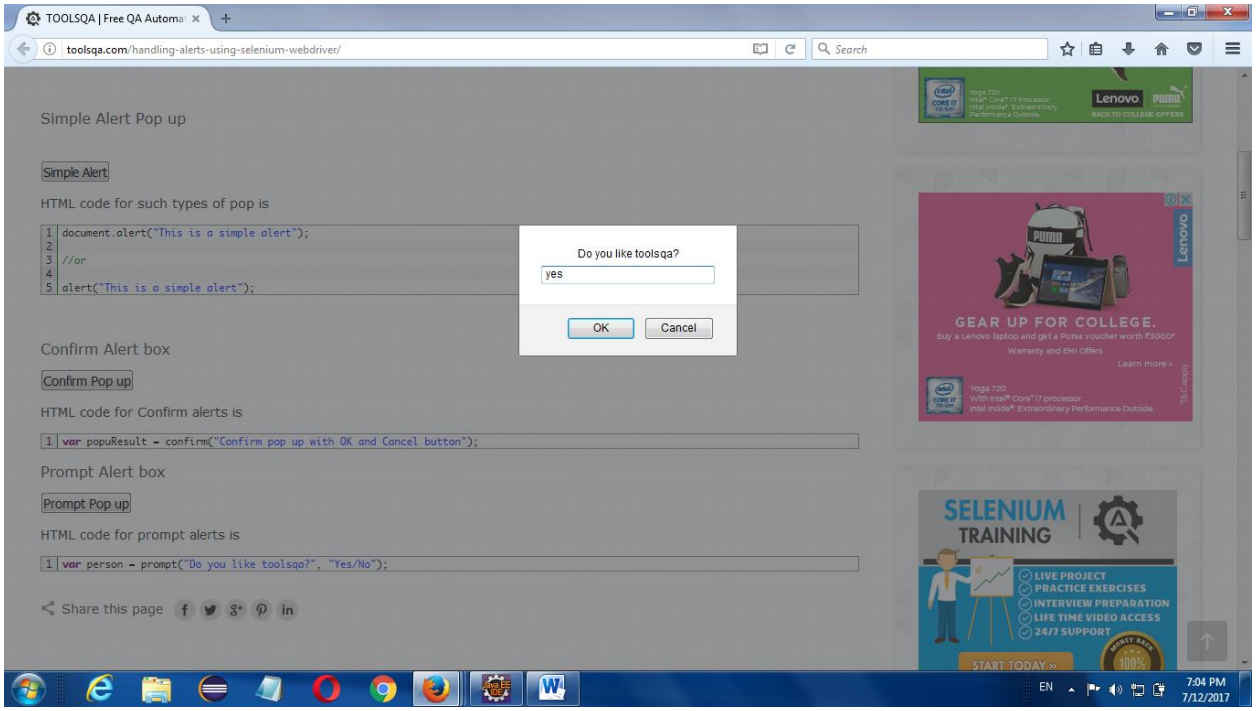
3. Prompt:

- In this method, first we have insert Yes/No and then we will click OK/Cancel

Example program:

```
public class Dummy4 {
	public static void main(String[] args) throws InterruptedException {
		System.setProperty("webdriver.gecko.driver",

	"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("http://toolsqa.com/handling-alerts-using-selenium-webdriver/");
		driver.findElement(By.xpath(".//button[text()='Prompt Pop up']")).click();
		Alert a = driver.switchTo().alert();
		System.out.println(a.getText());
		a.sendKeys("yes");
		Thread.sleep(3000);
		a.dismiss();
		driver.quit();

}

}
```

Output:



WINDOW HANDLING:

- It is used to move one window to another window

Example :

To Handle 2 windows:

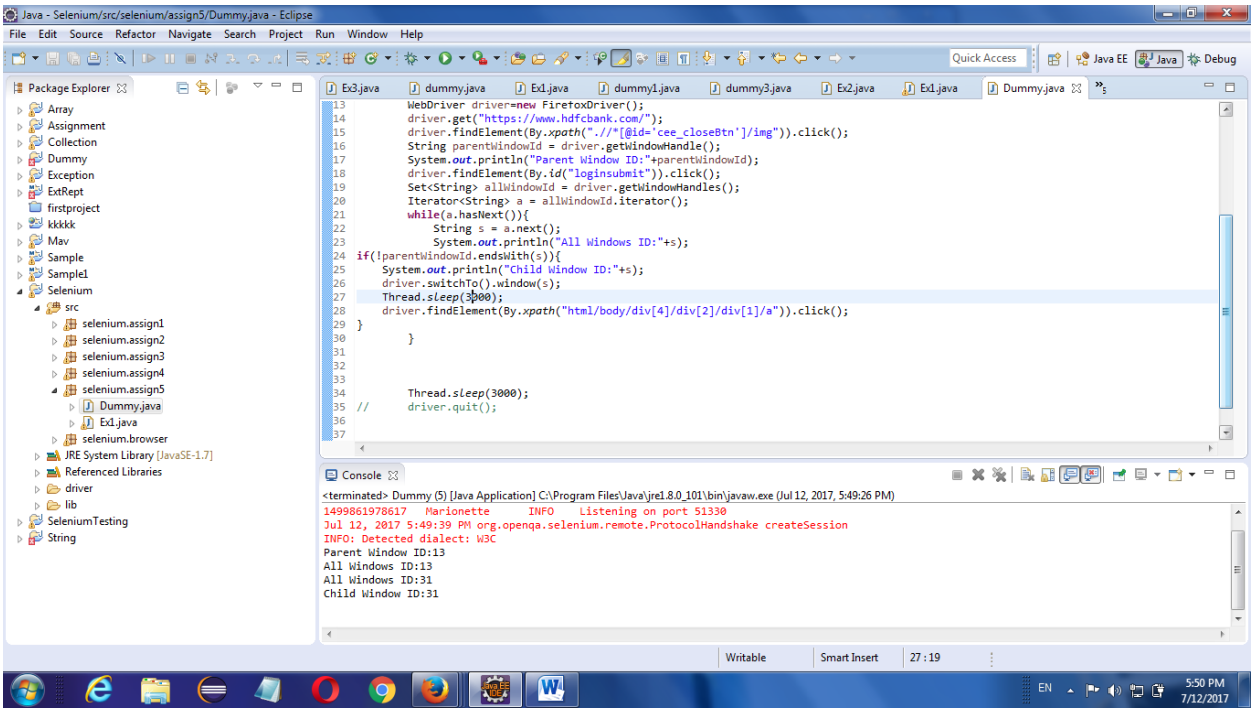
```
public class Dummy9 {

        public static void main(String[] args) throws InterruptedException {
                System.setProperty("webdriver.gecko.driver",

    "C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
                WebDriver driver = new FirefoxDriver();
                driver.get("https://www.hdfcbank.com/");

    driver.findElement(By.xpath(".//*[@id='cee_closeBtn']/img")).click();
```

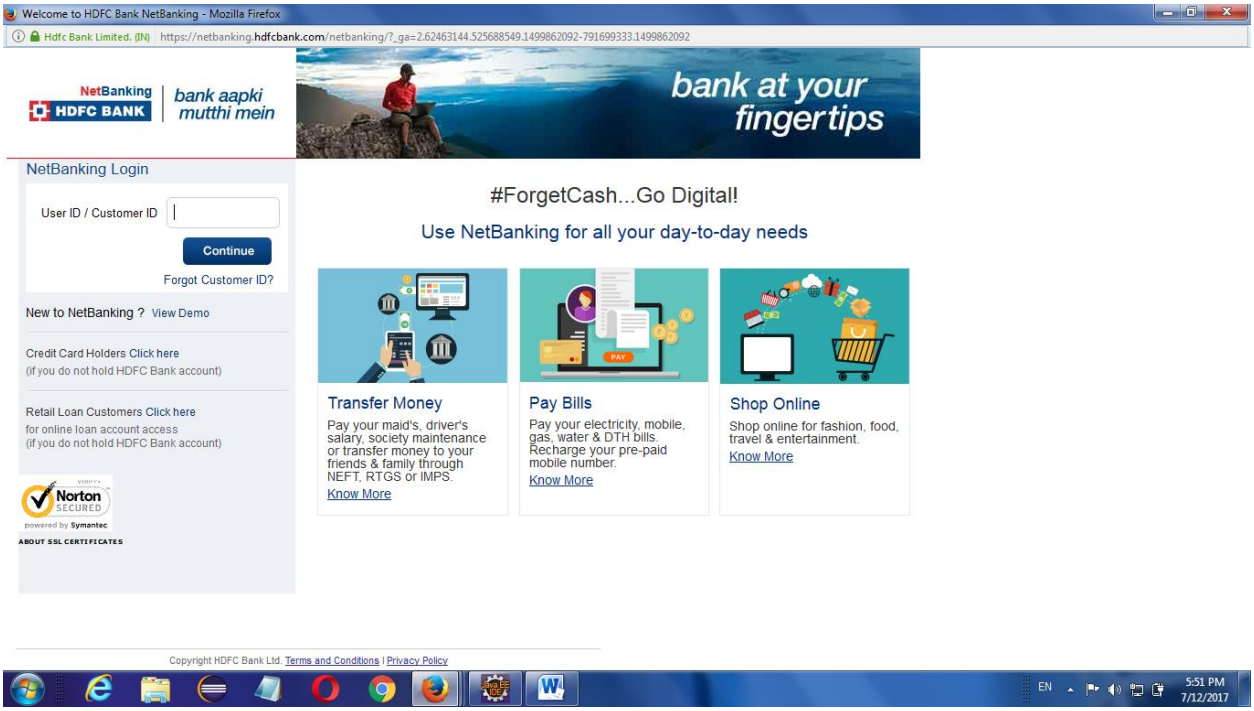
```
                String parentWindowId = driver.getWindowHandle();
                System.out.println("Parent Window ID:" + parentWindowId);
                driver.findElement(By.id("loginsubmit")).click();
                Set<String> allWindowId = driver.getWindowHandles();
                for (String x : allWindowId) {


                        if (!parentWindowId.equals(x)) {
                                System.out.println("Child Window ID:" + x);
                                driver.switchTo().window(x);
                                Thread.sleep(3000);

    driver.findElement(By.xpath("html/body/div[4]/div[2]/div[1]/a"))
                                                        .click();
                                driver.manage().window().maximize();
                                Thread.sleep(2000);
                                driver.switchTo().defaultContent();
                        }
                }
                Thread.sleep(3000);
                driver.quit();    }
}
```

Here,

- Home page(window) → parent window
- Next window → Child window
- getWindowHandle() → It is a method used to get parent window id
- getWindowHandles() → It is a method used to get all windows id
- So, we have A(parent window id) and C(A,B) but we don't have B.
- C → all windows id
- We have to find B using Iterator or enhancement for
- defaultContent() → it is a method used to move previous window

Output:


Java - Selenium/src/selenium/assign5/Dummy.java - Eclipse
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
Array
Assignment
Collection
Dummy
Exception
ExtRept
firstproject
kkkkk
Mav
Sample
Sample1
Selenium
src
selenium.assign1
selenium.assign2
selenium.assign3
selenium.assign4
selenium.assign5
Dummy.java
Ex1.java
selenium.browser
JRE System Library [JavaSE-1.7]
Referenced Libraries
driver
lib
SeleniumTesting
String
Ex3.java
dummy.java
Ex1.java
dummy1.java
dummy3.java
Ex2.java
Ex1.java
Dummy.java
WebDriver driver=new FirefoxDriver();
driver.get("https://www.hdfcbank.com/");
driver.findElement(By.xpath(".//*[@id='cee_closeBtn']/img")).click();
String parentWindowId = driver.getWindowHandle();
System.out.println("Parent Window ID:"+parentWindowId);
driver.findElement(By.id("loginsubmit")).click();
Set<String> allWindowId = driver.getWindowHandles();
Iterator<String> a = allWindowId.iterator();
while(a.hasNext()){
String s = a.next();
System.out.println("All Windows ID:"+s);
if(!parentWindowId.endsWith(s)){
System.out.println("Child Window ID:"+s);
driver.switchTo().window(s);
Thread.sleep(3000);
driver.findElement(By.xpath("html/body/div[4]/div[2]/div[1]/a")).click();
}
}
Thread.sleep(3000);
// driver.quit();
Console
<terminated> Dummy (5) [Java Application] C:\Program Files\Java\jre1.8.0_101\bin\javaw.exe (Jul 12, 2017, 5:49:26 PM)
1499861978617 Marionette INFO Listening on port 51330
Jul 12, 2017 5:49:39 PM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
Parent Window ID:13
All Windows ID:13
All Windows ID:31
Child Window ID:31
Writable
Smart Insert
27 : 19
5:50 PM
7/12/2017


Welcome to HDFC Bank NetBanking - Mozilla Firefox
Hdfc Bank Limited. (IN) https://netbanking.hdfcbank.com/netbanking/?_ga=2.62463144.525688549.1499862092-791699333.1499862092
NetBanking
HDFC BANK
bank aapki mutthi mein
bank at your fingertips
NetBanking Login
User ID / Customer ID
Continue
Forgot Customer ID?
New to NetBanking ? View Demo
Credit Card Holders Click here
(if you do not hold HDFC Bank account)
Retail Loan Customers Click here
for online loan account access
(if you do not hold HDFC Bank account)
Norton SECURED
powered by Symantec
ABOUT SSL CERTIFICATES
#ForgetCash...Go Digital!
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Transfer Money
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To Handling Multiple windows:

```
public class Login {

	public static void main(String[] args) throws InterruptedException, Throwable {

		System.setProperty("webdriver.chrome.driver",
				"C:\\Users\\10657527\\Downloads\\chromedriver_win32 (1)\\chromedriver.exe");
		WebDriver driver = new ChromeDriver();
		driver.manage().window().maximize();
		driver.get("https://www.hdfcbank.com/");
		driver.findElement(By.xpath(".//*[@id='cee_closeBtn']/img")).click();
		String parentWindowId = driver.getWindowHandle();
		System.out.println("Parent Window ID:" + parentWindowId);
		driver.findElement(By.id("loginsubmit")).click();
		Set<String> allWindowId = driver.getWindowHandles();

		List<String> l=new ArrayList<String>(allWindowId);


		//By passing index we can switch the desired window
		driver.switchTo().window(l.get(1));


	}

}
```

IFRAME:

- ✓ IFrame is a web page which is embedded in another web page or an HTML document embedded inside another HTML document.
- ✓ iFrame is defined by an *<iframe></iframe>* tag in HTML. With this tag you can identify an iFrame while inspecting the HTML tree.
- ✓ Same HTML for IFrame,

```
<body>
   <div class="box">
     <iframe name="iframe1" id="IF1" height="600"
width="400"
src="http://toolsqa.wpengine.com"></iframe>
   </div>
   <div class="box">
     <iframe name="iframe2" id="IF2" height="600" width="400"
align="left" src="http://demoqa.com"></iframe>
   </div>
```

```
  </body>
</html>
```

Identifying IFrame:

- ✓ We cannot detect the frames by just seeing the page or by inspecting Firebug.
- ✓ Observe the below image, Advertisement being displayed is an Iframe, we cannot locate or recognize that by just inspecting using Firebug. So the question is how can you identify the iframe?
- ✓ Right click on the element, If you find the option like 'This Frame' then it is an iframe.(Please refer the above diagram)
- ✓ Right click on the page and click 'View Page Source' and Search with the 'iframe', if you can find any tag name with the 'iframe' then it is meaning to say the page consisting an iframe.

Ways to Switch IFrame:

1. Switch to frame by index
2. Switch to frame by id or name
3. Switch to frame by webelement

✓ We can find total number of IFrame by using below commands

```
int size = driver.findElements(By.tagName("iframe")).size();
```

1. **Switch to frame by index:**

Example:

```
public class Dummy9 {

	@Test
	public void upload() throws InterruptedException, IOException
		{ System.setProperty("webdriver.gecko.driver",
				"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
		WebDriver driver = new FirefoxDriver();
		driver.get("http://toolsqa.wpengine.com/iframe-practice-page/");
		int size =
driver.findElements(By.tagName("iframe")).size();
```

```
System.out.println(size);
driver.switchTo().frame(0);

 driver.findElement(By.name("firstname")).sendKeys("vengat");
}
}
```

2. **Switch to frame by id or name:**

Using ID:

```
public class Dummy9 {

@Test
public void upload() throws InterruptedException, IOException {
System.setProperty("webdriver.gecko.driver",

"C:/Users/siva/workspace/Selenium/driver/geckodriver.exe"); WebDriver driver =
new FirefoxDriver(); driver.get("http://toolsqa.wpengine.com/iframe-practice-
page/"); int size = driver.findElements(By.tagName("iframe")).size();
System.out.println(size);
driver.switchTo().frame("IF1");

driver.findElement(By.name("firstname")).sendKeys("vengat");
}
}
```

Using Name:

```
public class Dummy9 {

    @Test
    public void upload() throws InterruptedException, IOException {
        System.setProperty("webdriver.gecko.driver",

    "C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
        WebDriver driver = new FirefoxDriver();
        driver.get("http://toolsqa.wpengine.com/iframe-practice-page/");
        int size = driver.findElements(By.tagName("iframe")).size();
System.out.println(size);
driver.switchTo().frame("iframe1");
```

```
 driver.findElement(By.name("firstname")).sendKeys("vengat");
}
                    }
```

3. **Switch to frame by webelement:**

```
public class Dummy9 {

        @Test
        public void upload() throws InterruptedException, IOException {
                System.setProperty("webdriver.gecko.driver",

            "C:/Users/siva/workspace/Selenium/driver/geckodriver.exe");
                    WebDriver driver = new FirefoxDriver();
                    driver.get("http://toolsqa.wpengine.com/iframe-practice-
                    page/"); int size =
                    driver.findElements(By.tagName("iframe")).size();
                    System.out.println(size);

                    WebElement web =
                    driver.findElement(By.id("IF2"));
                    driver.switchTo().frame(web);

                    driver.findElement(By.name("firstname")).sendKeys("venga
                    t");
        }
        }
```

WAITS:

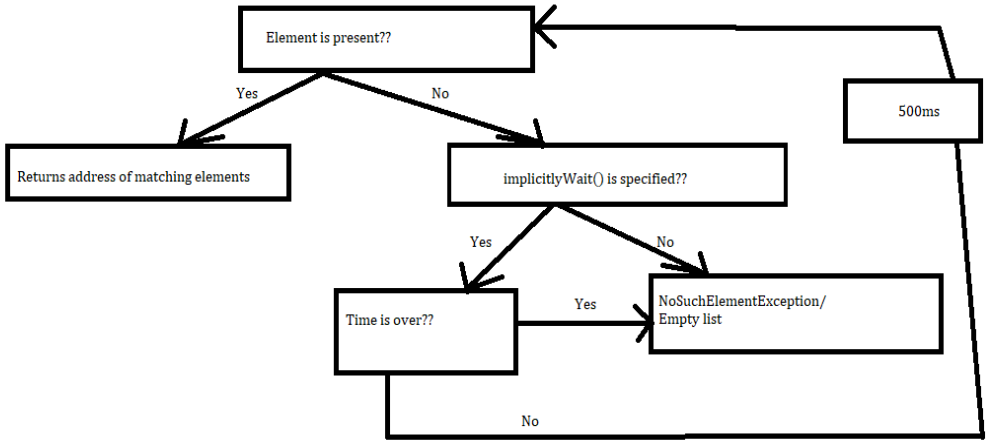
Synchronization:

- Matching speed of selenium with the speed of application is called as synchronization.
- If we trying to find the elements due to application late response, it throws exception.
- Using waits we can resolve this exception
- we can handle synchronization by using,
    - implicit wait
    - explicit wait
    - Thread.sleep()
    - Fluent wait

Implicit wait:

- It will handle the synchronization of findElement() and findElements().
- implicitlyWait() takes 2 arguments of type long and TimeUnit.
- In the 1st argument we have to specify waiting time and the 2nd argument we have to specify time unit
- The different time units are
    - ✓ DAYS
    - ✓ HOURS
    - ✓ MINUTES
    - ✓ SECONDS
    - ✓ MILISECONDS
    - ✓ MICROSECONDS
    - ✓ NANOSECONDS

Work flow of Implicit wait:



- When the control comes to findElement() or findElements(), it will check whether the element is present or not
- If the element is present, it will return address of the specified element.
- If the element is not present, it will check whether implicitlyWait() is specified or not.
- If implicitlyWait() is not specified then it will throw NoSuchElementException or Empty list.
- If implicitlyWait() is specified then it will check whether the specified time is over or not.

- If the specified time is over then it will throw NoSuchElementException or Empty list.
- If the specified time is not over then for every 500ms it will check whether the element is present or not.

Note:

- 500ms is called as polling period which is present in a class called FluentWait.
- Using implicit wait we can handle synchronization of findElement() and findElements() only.

Syntax:

```
driver.manage().timeouts().implicitlyWait(time, TimeUnit.SECONDS);
```

Ex:

```
driver.manage().timeouts().implicitlyWait(10, TimeUnit.SECONDS);
```

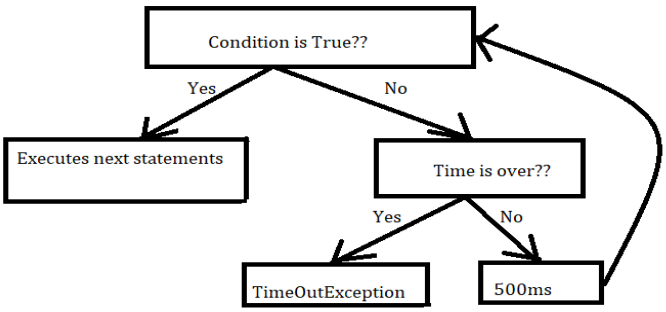
Example:

```
public class Login {

	public static void main(String[] args) throws InterruptedException {

		System.setProperty("webdriver.chrome.driver",
				"C:\\Users\\10657527\\Downloads\\chromedriver_win32
(1)\\chromedriver.exe");
		WebDriver driver = new ChromeDriver();
		driver.manage().timeouts().implicitlyWait(10, TimeUnit.SECONDS);
		driver.manage().window().maximize();
		driver.get("https://adactin.com/HotelApp/index.php");

		driver.findElement(By.id("username")).sendKeys("Venkat");
		driver.findElement(By.id("password")).sendKeys("Venkat@123");
		driver.findElement(By.id("login")).click();



	}

}
```

Explicit wait:

- It is used to handle synchronization of any methods including findElement() and findElements().
- WebDriverWait class is called as explicit wait which takes 2 arguments of type WebDriver and long
- Here the default time unit is seconds.

Work flow of explicit wait:



- During the Run Time, when the control comes to wait statement, it will check whether the specified condition is true of not.
- If the condition is true it will execute next statements otherwise it will check whether the time is over or not.
- If the specified time is over then it will throw TimeoutException.
- If time is not over then for every 500ms it will check whether the condition is true or not.

Note:

- 500ms is called as polling period which is present in a class called FluentWait.
- All the methods present in ExpectedConditions class are called as Predicates.

Syntax:

```
WebDriverWait wait = new WebDriverWait(driver,time);
```

Ex:

```
wait = new WebDriverWait(driver, time);

wait.until(ExpectedConditions.visibilityOf(element));
```

- The following are the Expected Conditions that can be used in Explicit Wait

1. alertIsPresent()
2. elementSelectionStateToBe()
3. elementToBeClickable()
4. elementToBeSelected()
5. frameToBeAvaliableAndSwitchToIt()
6. invisibilityOfTheElementLocated()
7. invisibilityOfElementWithText()
8. presenceOfAllElementsLocatedBy()
9. presenceOfElementLocated()
10. textToBePresentInElement()
11. textToBePresentInElementLocated()
12. textToBePresentInElementValue()
13. titleIs()
14. titleContains()
15. visibilityOf()
16. visibilityOfAllElements()
17. visibilityOfAllElementsLocatedBy()
18. visibilityOfElementLocated()

Example:

```
public class Login {

	public static void main(String[] args) throws InterruptedException {

		System.setProperty("webdriver.chrome.driver",
				"C:\\Users\\10657527\\Downloads\\chromedriver_win32
(1)\\chromedriver.exe");
		WebDriver driver = new ChromeDriver();
		driver.manage().window().maximize();
		driver.get("https://adactin.com/HotelApp/index.php");

		driver.findElement(By.id("username")).sendKeys("Venkat");
		driver.findElement(By.id("password")).sendKeys("Venkat@123");

		WebDriverWait wait =new WebDriverWait(driver, 60);
```

```
        wait.until(ExpectedConditions.elementToBeClickable(driver.findElement(By.id("login"))));


                driver.findElement(By.id("login")).click();
                }
}
```

Fluent wait:

- The fluent wait is used to tell the web driver to wait for a condition, as well as the frequency with which we want to check the condition before throwing an "ElementNotVisibleException" exception.
- Frequency: Setting up a repeat cycle with the time frame to verify/check the condition at the regular interval of time
- Let's consider a scenario where an element is loaded at different intervals of time. The element might load within 10 seconds, 20 seconds or even more then that if we declare an explicit wait of 20 seconds. It will wait till the specified time before throwing an exception. In such scenarios, the fluent wait is the ideal wait to use as this will try to find the element at different frequency until it finds it or the final timer runs out.

Syntax:

```
Wait wait = new FluentWait(WebDriver reference)
                           .withTimeout(timeout, SECONDS)
                           .pollingEvery(timeout, SECONDS)


                           .ignoring(Exception.class);
```

Ex:

```
Wait wait = new FluentWait(driver).withTimeout(5,
TimeUnit.MILLISECONDS).pollingEvery(60, TimeUnit.SECONDS)
                           .ignoring(Exception.class);
```

FILE UPLOADING USING ROBOT CLASS AND SENDKEYS:

Using Robot class:

Ex:

```
public class Login {

	public static void main(String[] args) throws InterruptedException, Throwable {

		System.setProperty("webdriver.chrome.driver",
				"C:\\Users\\10657527\\Downloads\\chromedriver_win32
(1)\\chromedriver.exe");
		WebDriver driver = new ChromeDriver();
		driver.manage().window().maximize();
		driver.get("http://demo.guru99.com/test/upload/");

		String path="C:\\Users\\10657527\\Desktop\\Venkatraman.docx";

		driver.findElement(By.name("uploadfile_0")).click();
		Thread.sleep(2000);
		Robot robot = new Robot();
		robot.setAutoDelay(3000);
		StringSelection selection = new StringSelection(
				path);
		Toolkit.getDefaultToolkit().getSystemClipboard()
				.setContents(selection, null);
		// press ctrl+vsss
		robot.keyPress(KeyEvent.VK_CONTROL);
		robot.keyPress(KeyEvent.VK_V);
		robot.setAutoDelay(3000);
		// release ctrl+v
		robot.keyRelease(KeyEvent.VK_CONTROL);
		robot.keyRelease(KeyEvent.VK_V);
		// press enter
		robot.setAutoDelay(3000);
		robot.keyPress(KeyEvent.VK_ENTER);
		robot.keyRelease(KeyEvent.VK_ENTER);


	}

}
```

Using sendKeys:

Ex:

```
public class Login {

	public static void main(String[] args) throws InterruptedException, Throwable {

		System.setProperty("webdriver.chrome.driver",
				"C:\\Users\\10657527\\Downloads\\chromedriver_win32
(1)\\chromedriver.exe");
		WebDriver driver = new ChromeDriver();
		driver.manage().window().maximize();
		driver.get("http://demo.guru99.com/test/upload/");

		String path="C:\\Users\\10657527\\Desktop\\Venkatraman.docx";

		driver.findElement(By.name("uploadfile_0")).sendKeys(path);;



	}

}
```

BROKEN LINKS:

Broken links:

- If any link is failed load it's destination page then that link is called as broken links.
- It is not possible to verify broken links by using selenium.
- We can verify the broken links by using Java
- In order to verify the broken links we use a class called URL which is available in java.net package

Sample web page:

```
<a href="http://www.qspiders.com">Qspiders</a>

<a href="www.qspider.com">Qspider</a>

<a href="http://www.qsp.com">Qsp</a>
```

Example1: Typical java program to verify broken links

```
public class JavaDemo
{
	public static void main(String[] args) throws IOException
	{
		URL url = new URL("http://www.qspiders.com");
		HttpURLConnection con = (HttpURLConnection) url.openConnection();

		int code = con.getResponseCode(); //if code is 200, then link is not broken
		System.out.println(code);

		String msg = con.getResponseMessage(); //if msg is Ok, then link is not broken
		System.out.println(msg);
	}
}
```

Example 2:

```
public class Login {

	public static void main(String[] args) throws InterruptedException, Throwable {

		System.setProperty("webdriver.chrome.driver",
				"C:\\Users\\10657527\\Downloads\\chromedriver_win32
(1)\\chromedriver.exe");
		WebDriver driver = new ChromeDriver();
		driver.manage().window().maximize();
		driver.get("https://www.google.com/");

List<WebElement> allLinks = driver.findElements(By.xpath("//a"));

		int broken=0, notBroken=0;

		for(WebElement link:allLinks)
		{
			String href = link.getAttribute("href");
			String text = link.getText();
			System.out.println("Link: "+text);
			System.out.println("URL: "+href);

			try
			{
				URL url = new URL(href);
				HttpURLConnection con = (HttpURLConnection)
url.openConnection();
```

```
                        int code = con.getResponseCode();
                        if(code==200)
                        {
                                System.out.println("Links is not broken....");
                                notBroken++;
                        }
                        else
                        {
                                System.out.println("Link is broken1:");
                                System.out.println(con.getResponseMessage());
                                broken++;
                        }
                }
                catch (Exception e)
                {
                        System.out.println("Link is broken2:");
                        broken++;
                }

        System.out.println("================================================");
                }

                System.out.println("Total number of links: "+allLinks.size());
                System.out.println("Number of broken links: "+broken);
                System.out.println("Number of non broken links: "+notBroken);

                Thread.sleep(2000);
                driver.close();
}
}
```

Thank you